K. R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

SCHOOL OF EDUCATION

(SOED)

Bachelor of Elementary Education

B.El.Ed.

Programme Code: 26

2019-23

Approved in the 20th Meeting of Academic Council Held on 16 July 2019

Member Secretary
K.R. Mangalam University

Registrar
K.R. Mangalam University
Sohna Road, Gurugram, Haryana

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CONTENT

1. Introduction

K.R. Mangalam University, Gurugram is a State Private University established under Haryana Private Universities Act and is empowered to award degrees under section 2f of the UGC act, 1956. Spread over 26 acres, the K.R. Mangalam University campus is meticulously designed with special emphasis on conserving nature. KRMU is located in a wonderful location with magnificent view of Aravali hills. The campus is beautiful and has all facilities and resources for a conducive learning environment.

Vision

The University was developed with a vision to develop it as a world class University and to deliver a substantial innovation and international impact through creation and dissemination of knowledge.

Mission

- Transforming lives through knowledge, collaboration and partnership.
- Undertaking world class research of high impact on society
- Creating niche of innovation, entrepreneurship and creativity.
- Nurturing and rewarding skills and talent.
- Pursuing excellence in education.

2. About the School of Education (SOED)

The School of Education established in 2016 strives to foster and maintain an environment of creativity with a deep commitment to inculcate excellence in academics and contribute towards overall development of personality of its students. The school strives to impart state-of-the-art, technology embedded teaching through quality-based teacher education curriculum. We at The School of Education offer diverse Programmes of studies that are designed to develop an insight into the nuances of teaching and learning in terms of theoretical perspectives, latest pedagogical techniques and also facilitate the development of the students' understanding of social, emotional and intellectual ecosystem with relation to teaching and learning. Our School offers the following programmes:

- **B.Ed.** **M.A. (Education)**
- **B.El.Ed.** **Ph.D. (Education)**

School Vision

- The School of Education aspires to become an internationally recognized department through excellence in the interdisciplinary arena of education, research, and innovation, preparing socially responsible lifelong learners contributing to nation-building.

School Mission

- M1: Create socially concerned, spiritually oriented, law-abiding teachers with the right attitudes and values.
- M2: Establish the students to lead the dynamic school by integrating theoretical and practical leadership and administrative tasks.

- M3: Make students succeed in a rapidly changing society by understanding the challenges of sustainability issues.
- M4: Prepare competent, committed, and creative professionals by engaging them in innovative teaching and empirical research activities.

Objectives:

- To develop the skills of student teachers to plan learning experiences in and outside the classroom that are based on learners' existing proficiency, interests, experiences and knowledge, and enable them to understand how students come to view, develop, learn and make sense of subject matter contained in the curriculum.
- To provide student teachers self-identity as a 'teacher' through school based learning experiences and reflective practices that continually evaluate the effects of their choices and actions
- To change the behaviour, attitude and values of prospective teachers so that they grow and develop into responsible and accountable agents of change in the society, who are sensitive to local, national and global concerns and issues vital for human survival, progress and development.
- To provide a rich programme of curricular and extra-curricular activities for student teachers for all round development of their personalities.
- To prepare students to lead and manage schools in a dynamic and evolving environment, with emphasis on the relationship between theoretical and practical aspects of leadership and administrative tasks.

Innovative Pedagogies:

- Dialogue and team teaching
- Group discussions
- Activity based teaching.
- Assignments
- Field visits
- Innovative classroom assessment techniques
- Presentations
- Learning through technology.
- Cooperative and collaborative learning
- Role play
- Demonstration
- Video conferencing
- Simulated teaching

Aims of Bachelor Degree Programme

Since 2016, the School of Education strives to foster and maintain a creative environment with a deep commitment to inculcate excellence in academics and contribute towards students' development. The school brings an attitudinal change in prospective teachers for their advancement into accountable agents of change in the society, who are sensitive to local, national, and global concerns and issues vital for human survival, progress, and development. The School of Education offers diverse programmes of studies that are designed to develop an insight into the nuances of teaching and learning in terms of

theoretical perspectives, pedagogical techniques that facilitates the students' understanding of social, emotional, and intellectual ecosystem.

3. The programmes offered by School of Education (SOED)

3.1 Bachelor of Education (B.Ed.)

Programme Duration: 2 Years

Eligibility Criteria:

- Candidates with at least 50% marks either in the Bachelor's Degree and/or in the Master's degree in Sciences/ Social Sciences/ Humanity, Bachelor's in Engineering or Technology with specialization in science and mathematics with 55% marks or any other qualification equivalent thereto, are eligible for admission to the programme.
- The reservation and relaxation for SC/ST/OBC/PWD and other categories shall be as per the rules of the central Government/ state government, whichever is applicable.

This Programme aims at complete development of the student in to a teacher; particularly acquiring knowledge and skill, in individual care of the learner and also in the methods and evaluation designed to facilitate learning. It prepares the teachers for upper primary to senior secondary classes at the school level, according to the National Council of Teacher Education (NCTE) guidelines.

Eligibility Criteria:

The candidate should have passed the 10+2 examination conducted by Central Board of Secondary Education or Equivalent examination from a recognized Board with minimum of 50% marks in aggregate.

The reservation and relaxation for SC/ST/OBC/PWD and other categories shall be as per the rules of the Central Government/ State Government, whichever is applicable. This Programme aims at rendering the social function of a school teacher in the context of achieving Universalization of Elementary Education besides focusing on developing a deep and critical understanding of the curriculum and pedagogy in teachers, who are believed to perform a transformative role in school education. Both professional and academic options are available to the students who graduate with a B.El.Ed. Degree.

Career Option: Teaching in Government as well as private schools/institutions, Exceptional educational practitioners can be appointed as Principal, Head Teacher, Educational Consultant, Working with NGOS in the field of education and Opportunity for joining higher education Programmes such as M.Ed./M.Phil/Ph.D.

3.2 Bachelor of Elemntary Education (B.El.Ed.)

Programme Duration: 4 years

Eligibility Criteria:

The candidate should have passed the 10+2 examination conducted by Central Board of Secondary Education or Equivalent examination from a recognized Board with minimum of 50% marks in aggregate.

The reservation and relaxation for SC/ST/OBC/PWD and other categories shall be as per the rules of the Central Government/ State Government, whichever is applicable.

This Programme aims at rendering the social function of a school teacher in the context of achieving Universalization of Elementary Education besides focusing on developing a deep and critical understanding of the curriculum and pedagogy in teachers, who are believed to perform a transformative role in school education. Both professional and academic options are available to the students who graduate with a B.El.Ed. Degree.

Career Option: Teaching in Government as well as private schools/institutions, Exceptional educational practitioners can be appointed as Principal, Head Teacher, Educational Consultant, Working with NGOS in the field of education and Opportunity for joining higher education Programmes such as M.Ed./M.Phil/Ph.D.

4. Class Timings

The class will be held from Monday to Friday from 9.10 A.M. to 4.10 P.M.

5. Syllabi

The syllabi of the B.El.Ed. programme offered by School of Education (SOED) are given in the following pages:

FOUR YEAR B.El.Ed. PROGRAMME AT A GLANCE

	Sem I	Sem II	Sem III	Sem IV	Sem V	Sem VI	Sem VII	SemVIII	**Total**
Course	7	6	6	7	6	6	2	7	**46**
Credits	26	22	18	20	18	20	19	18	**161**

Scheme of Studies and Syllabi for B.El.Ed. Programme as per Choice Based Credit System (CBCS)

Semester I			
S.No.	**Course Code**	**Course Title**	**C**
1	SEED101A	Basic Concepts and Thoughts in Education	4
2	SEED103A	Nature of Language I	4
3	SEED105A	Core Mathematics I	4
4	SEED107A	Core Natural Sciences I	4
5	SEED109A	Core Social Sciences I	4
6		Open Elective	4
7	SEED111A	School Exposure I	2
		Total	**26**

SEED101A	BASIC CONCEPTS AND THOUGHTS IN EDUCATION	4

Course Overview

One of the Basic premises underlying the concept of Education is the philosophical and sociological thought. Philosophy of Education is essentially a method of approaching educational experience rather than a body of conclusions. This course will endeavour to develop a basic understanding of philosophical process of solving educational problems through philosophical method, from a philosophical attitude to arrive at philosophical conclusions and results. It will facilitate the understanding of the following: Interpretation of human nature, the world and the universe and their relation with man and society. Interpretation of aims and ideals of education, the relationship of various components of the system of education, relationship of education and various areas of national life (economic system, political order, social progress, social and cultural reconstructions etc.), educational values, theory of knowledge and its relationship to education.

Objectives

The course will enable the student-teachers to -

- Promote reflective thinking among students with relation to the philosophical and sociological perspectives of Education.
- Sharpen their perception of the concepts involved in educational practice.
- Enhance their capacity to formulate responses to the reality of education.
- Critically evaluate and systematically reflect upon general theories of Education.

Unit I: Basic Concepts in Philosophy of Education

- Teaching, training, learning and education in relationship to the child's nature, growth anddevelopment.
- Relationship between Philosophy and Education. Branches of Philosophy: Metaphysics, Epistemology & Axiology with special reference to schoolsubjects
- Philosophical basis of pedagogical techniques with reference to Activity, Discovery and Dialogue based teaching-learning.
    1. **Activity**: With reference to Dewey's ideas on learning and Gandhi's NaiTalim
    2. **Discovery:** With reference to Montessori's description of children's intellectual growth and Dewey's concept of inquiry
    3. **Dialogue**: With reference to Plato (Allegory of the Cave), kathopanishad's dialogue between Yama, the God of Death and Nachiketa, the young boy and

Buber's idea of a dialogue between seeker and the master('I and Thou') along with a discussion on the role of ateacher

Unit II: Basic Concepts in the Sociology of Education

- State and Democracy
- Constitutional Perspective: Equity, Equality, Freedom, Social Justice, Inclusiveness and Secularism.
- Socialization, Role of family and school, conflicts andcoherence.
- Political ideology with reference to curriculum andtextbooks.
- Determinants of aims of Education: culture, economy, and history
- Dominance, conflict and resistance in the context ofschooling.

Unit III: Introduction to the main ideas of the following thinkers concerning Aims of Education, School Curriculum, Pedagogical Practices, Role of Teachers and Discipline

- John Dewey
- Gandhi
- Tagore
- Freire
- J. Krishnamurti

Unit IV: Practicum

- A detailed study of one of the thinkers mentioned in the entire syllabus

Suggested Readings

- Buber, Martin (2006). 'Teaching and Learning' in the Writings of Martin Buber.Author: Will Herberg.Universal Digital Library.The World Publishing Company: NewYork.
- Cohen, Brinda (1969). Educational Thought: An Introduction. Macmillan: Britain
- Dewey, John (1902). The Child and the Curriculum. Chicago: The University of Chicago Press.
- Dewey, John (1915). The School and Society. The University of Chicago Press.
- Dhankar, Rohit (2006) Shiksha Aur Samajh Haryana: Aadhar Prakashan.
- Elmhirst, L.K. (1994). Rabindranath Tagore: Pioneer in Education. Delhi: Sahitya Chayan.
- Freire, Paulo (1970). Pedagogy of the Oppressed. London: Penguin Books.
- Hanh, Thich Nhat (1987). *Being Peace*, Parallex Press, Unified Buddhist

Church.Berkeley.

- Hanh, ThichNhat (2013). *Peace of Mind.:Becoming Fully Present*. BantamPress.
- Jiddu, Krishnamurti (1975). Lutyens, Mary,ed.Freedom from the Known. San Francisco:Harper.
- Krishnamuri, Jiddu (1992). Education and the Significance of Life. India: Krishnamurti FoundationIndia.
- Kumar, Krishna (1977). Raaj Samajaur Shiksha. Delhi: Rajkamal.
- Kumar, Krishna (1998). Shaikshik Gyan Aur Varchasv. Delhi: Granthshilpi .
- Kumar, Krishna (2002). Shikshaaur Gyan. Delhi: Granthshilpi.
- Kumar, Krishna (2004). What is Worth Teaching? Delhi: Orient Longman.
- Mascaro, Juan (1965). The Upanishads. England: Penguin.
- Montessori, Maria (1965). Spontaneous Activity in EducationNew York: Schocken Books.
- Montessori, Maria (2012). The Absorbent Mind. New Delhi: Aakar Books.
- Moore, T.W. (1974). Educational Theory: An Introduction. London: Routledge & Kegan Paul.
- Sykes, Marjorie (1988). The Story of NaiTalim: fifty Years of Education at Sevagram. Wardha: Nai Talim Samiti.
- Wilson, J and Cowell, Barbara\ (1928). Taking Education Seriously. London: The Falmer Press.
- Woozley, A.D. (1949). Theory of Knowledge: An Introduction. London: Hutchinson's University Library. (Hindi Translation: Gyanmeemansa Parichay Patna: Bihar Hindi Granth Academy)

SEED103A	NATURE OF LANGUAGE I	4

Course Overview

This course gives an insight into the nature of languages with reference to the linguistics terminologies. It offers an introduction to linguistics and the study of language, and assumes no previous knowledge of the subject. It aims to provide a historical perspective on the development of linguistic theory, and explores current ideas in many of the areas which make up the discipline - i.e. Phonology, Morphology, Lexical Semantics and Syntax.

Objectives

The course will enable the student-teachers to –

- Gain an understanding of the essential elements of linguistics.
- Become conversant with both theoretical and pragmatic approaches.
- Apply the principles of linguistic theory.
- Have knowledge and understanding of how a language works and how we communicate.
- Develop a solid foundation for a wide range of careers.

Unit I: Introduction to Language and Linguistics

Definition, Scope and Significance; Verbal and Non Verbal; Human and Animal System of Communication; Design features of Language; Form and Function; Structural and Functional notions of language.

Unit II: Linguistics & its Branches

Definition; Linguistic hierarchy of language**:** Phonology – Morphology – Syntax – Semantics- Pragmatics– Etymology -Semiology; word formation; sentence synthesis.

Unit III: Language, Mind and Brain

Biological foundations of language, language and thought; Language Production and Processing, Lateralization and Localisation; Language and Speech Disorders.

Unit IV: Language and Society

Relationship between language and society : identity, power and discrimination; Standard and Non-Standard Varieties of Language; Pidgins and Creoles, Language and Dialect. Multilingualism: differential status of Indian classroom language.

Suggested Readings

- Akmajian, A., R. A. Demers and R, M. Harnish (1974). Linguistics: An Introduction to Language and Communication, 2nd ed. New York: Holt, Rinehart and Winston.
- De Saussure, Ferdinand (1966). Course in general linguistics. New York: McGraw Hill Introduction: Chapter 3.
- Fromkin, V., Rodman, R., & Hyams, N. M. (2007). An introduction to language. Boston, MA: Thomson Wadsworth.

SEED105A	CORE MATHEMATICS I	4

Course Overview

Numbers make counting things easy for us. Numbers help us count concrete objects. They help us to say which collection of objects is bigger and arrange them in order e.g., first, second, etc. Numbers are used in many different contexts and in many ways. This course enables students to think about various situations where we use numbers. Students shall learn how to use and express large numbers in symbols. Further, letters take over numbers arithmetic. Letters allow us to write rules and formulas in a general way. Students shall learn methods of determining unknowns to solve linear equations and inequalities that enable students to solve many daily life problems. Students shall also learn elementary geometric concepts that will help them know more about the shapes around them. It will further enable them to calculate the area and volume enclosed by different shapes.

Objectives

The course will enable the student-teachers to –

- Understand number system and use them in various situations.
- Use arithmetic of letters to solve daily life problems.
- Grasp elementary geometrical ideas.
- Calculate perimeter, area and volume of different shapes.

Unit I: Number System

- Knowing our Numbers
- Playing with Numbers

- Whole Numbers
- Negative Numbers and Integers
- Fractions

Unit II: Algebra

- Rational exponents, Irrational numbers & radicals
- Solving equations
- Solving inequalities
- Linear word problems
- Linear equations & graphs

UNIT III: Geometry

- Basic geometrical ideas (2-D)
- Understanding Elementary Shapes (2-D and 3-D)
- Symmetry: (reflection and rotational)
- Construction (using Straight edge Scale, protractor, compasses)

UNIT IV: Mensuration

- Perimeter
- Surface Areas
- Area
- Volume

Practicum

1. To identify factors of numbers from a given collection.
2. To form different shapes on a geoboard and explore their areas.
3. To explore various properties of different types of quadrilaterals.
4. To verify the relation of different types of angles formed by a transversal with two parallel lines.
5. To form different angles and measure them.
6. To fold and explore the formation of solid shapes through their nets.

7. To make a square root spiral by using paper folding.
8. To verify the fact that increase\ decrease in the volume of a solid may not result the same change in its surface area

Suggested Readings

- Brain Bolt, Mathematical Activities, A resource Book for Teachers, Cambridge University Press: Cambridge.
- Manual of Upper Primary Mathematics Kit, Workshop Department, NCERT
- NCERT (2005) NCF 2005 Position Paper on Mathematics NCERT: New Delhi.
- NCERT, Mathematics, Textbook for Class VI – VIII.
- R. D. Sharma, Mathematics, Dhanpat Rai Publications, Latest Edition.
- Ram Ballabh, A Text book of coordinate geometry, Prakashan Kendra: Delhi, 13th Edition.

SEED107A	CORE NATURAL SCIENCE I	4

Course Overview

This course aims to review secondary school science content, with a focus on methods of science and the development of skills of scientific enquiry. The course gives a hands-on experience of scientific knowledge through activities and projects to develop skill of scientific enquiry.

Objectives

Unit I: Atoms and Molecules

- Structure of Atom
- Atomic Mass
- Elements and Symbols of Elements
- Molecules and Molecules of Elements and Compounds
- Concept of Ion
- Writing Chemical Formulae

Unit II: Motion ad Laws of Motion

- Concept of Motion
- Types of Motion
- Speed, Velocity and Acceleration
- Equations of Motion
- Force, Friction and Inertia
- Laws of Motion

Unit III: The Fundamental Unit of Life

- Cell Structure and Functions
- Animal Tissues
- Plant Tissues
- Diversity in Living Organisms

Unit IV: Our Environment and Natural Resources

- Eco-system and its Components
- Food Chains and Webs
- Biogeochemical Cycles: The Water-Cycle, The Nitrogen-Cycle and The Carbon-Cycle
- Natural Resources - Resources on Earth, Minerals Riches in the Soil
- Changes in Environment - Depletion in Ozone Layer, Greenhouse Effect

Suggested Readings

- Eklavya (1978). Bal Vigyanik, Class 6, 7, 8, Madhya Pradesh Pathyapustak Nigam: Bhopal.
- Leoburn, Arkady (1966). Tell Me Why, Hamlyn Publication: London.
- NCERT Class IX Textbook, NCERT, New Delhi.
- NCERT Class X Textbook, NCERT, New Delhi.
- Nelson, R. and Lootoian, B. Fundamental Concepts of Biology, John Wiley & Sons: New York.
- UNESCO (1979). New UNESCO Source Book for Science Teaching, University Press (India) Ltd: India.
- Wolf, S. F. Biology (1977). The Foundations, Wadsworth: California.
- Ziman, J. (1984). An introduction to Science Studies, Cambridge University Press: Cambridge.

SEED109A	CORE SOCIAL SCIENCES I	4

Course Overview

The aim of the paper is to provide a foundation in context of present day structures. Social science cannot be studied in isolation, its interaction with other subjects is equally crucial. It is an interdisciplinary realm. It primarily aims at understanding various phenomenons in immediate social and political environment. The learners are introduced to the diversity of people and their practices in different societies, regions, etc. It has an important role in generating sensitivity towards human values of peace, cooperation, social justice, environmental protection and other concerns.

Objectives

The course will enable the student-teachers to -

- Have understanding of the social system.
- Understand the inter-relationship between individual and government.
- Aware about the political, social and economic issues which affect day-to-day lives across time and space.

Unit I: Social Science as a Discipline

- Nature ofSocial Science,
- Social Science as a discipline,
- Importance of Social Sciences,
- Relationship of Social Science with other disciplines.

Unit II: Livelihood, Economies and Societies

- The pre-modern world,
- The age of industrialization,
- The 19^{th} century global economy,
- The inter war economy (Great depression),
- Rebuilding the world economy and the resulting changing societies.

Unit III: Working of Indian Democracy

- Historical Background,
- Making of the Constitution,
- Salient Features of Indian Constitution,
- Preamble of the constitution.

Unit IV: Challenges for Independent India

- Causes that led to partition,
- Two-Nation Theory,
- Nation-building,
- Meaning of National Integration
- Obstacles to National Integration.

Suggested Readings

- Aggarwal R.C. and Bhatnagar, Mahesh (2005). Constitutional Development and National Movement in India, S. Chand.
- Chandra, Bipan (2009). History of Modern India, Orient Blackswan.
- Chandra, Bipan (2016). India's Struggle for Independence: 1857-1947, Penguin India.
- Roskin, Michael G. and Robert L. et al (2017). Political Science: An Introduction, Pearson.

	OPEN ELECTIVE	**4**

SEED111A	**SCHOOL EXPOSURE I**	**2**

Course Overview

The School Exposure I Programme shall be carried out during the first semester in local/nearby school or schools. For this, the student may be placed in regional language medium schools; and the rest may be placed in Government, Private, Urban, Rural and Schools for challenged learners.

A student teacher needs to visit at least two types of schools: in the first week to one type of school; and in the second week to another type of school. A brief orientation programme can be arranged before sending the student-teachers to schools to acquaint them with the objectives and modalities of such programme. Student-teachers will undertake different assignments during their visits to schools.

During this programme, the student-teachers shall observe the school/classroom environments with reference to infrastructure, equipments, teaching learning materials, human resources, organisation of various activities, etc. form classes I to VIII and prepare a profile of the school to which they are attached. The institute shall develop detailed guidelines for school observation; and orient the student-teachers to the process of school observation as well as to the use of guidelines.

After completion of the field exposure programme, student-teachers shall be required to develop a detailed report and share the same in a seminar/meeting at the Institute.

Objectives

The course will enable the student-teachers to -

- Interact with elementary school children.
- Explore creative ways of organizing activities for children.
- Reflect upon their experiences.

Course Content

During this period teacher-trainee will be engaged in different groups of activities under the supervision of the teacher-Incharge and submit the report.

Activity: 1 Class Room Observation

Activity: 2 Visit different types of lab (Preparation of Lab report)

Activity: 3 Develop teaching learning resources

Activity: 4 Organise different types of social awareness Programme

Activity: 5 Prepare a report on special children (If Any)

Scheme of Studies and Syllabi for B.Ed. Programme as per Choice Based Credit System (CBCS)

Semester II			
S.No.	**Course Code**	**Course Title**	**C**
1	SEED102A	Child Development	4
2	SEED104A	Nature of Language II	4
3	SEED106A	Core Mathematics II	4
4	SEED108A	Core Natural Sciences II	4
5	SEED110A	Core Social Sciences II	4
6	SEED112A	School Exposure II	2
		Total	**22**

SEED102A	**CHILD DEVELOPMENT**	**4**

Course Overview

The primary focus of this course is learning about children in order to become an effective teacher. It provides Student-teachers with an overview of child development and growth as a holistic process. The latest research and thinking about the conditions that affect children's learning and development will be addressed across developmental domains and stages of development. Development of language and cognition as well as emotional, social, and physical characteristics of children will be explored. Student-teachers will form their own child development theories. Implications of child development theory for schools, teachers, and society will be considered. Student-teachers will be provided with real experiences to study and observe children at different levels of development. They will have an opportunity to enhance their understanding of how people learn individual differences and learning styles, and how theories of learning and development relate to classroom learning and teaching. The course will enable Student-teachers to create learning environments that suit the needs of an individual child as well as children in general.

Objectives

The course will enable the student-teachers to -

- Understand the growth and development of children.
- Understand the role of observation of children's development in the workplace.
- Learn how to observe children's development.

- Understand the required planning to support children's needs and development.

Unit I: Concept, Issues and Theories of Human Development

What is development and why should we study it; developmental principles; influences of heredity and environment; methods for studying development; concepts of socialisation, education and acculturation in the context of development; theories of Erikson, Piaget and Kohlberg; significant developmental periods in the human life span.

Unit II: Birth and Infancy

Importance of conception; pre-natal development and birth; physical and mental development of infants; emotions in infancy; the infant in the family and implications for personality development.

Unit III: The Pre-school Child

Physical growth and motor development; intellectual characteristics; development of personality with special reference to identification and child-rearing techniques; gender-stereotyping; morality; play patterns of preschool children.

Unit IV: The Elementary School Child

Physical growth and development; the developing mind — intelligence; language and thought; the social world of the child, parents and children, friends, school and media, play; moral attitudes and behavior; development of self-identity, self-concept; gender roles; play, interests and activities of the elementary school child.

Suggested Readings

- Berk, Laura E. (1996). Child development, Prentice Hall of India, New Delhi.
- Branes, P. (Ed.) (1995). Personal, Social and Emotional Development of Children, Blackwell: Oxford, Chapter 1 and 6.
- Crain, William C. (1980). Theories of Development: Concepts and Applications, Prentice Hall of India , New Delhi 1980
- Stewart, A. Clarke and Friedman, S. (1987). Child development: Infancy through Adolescence, John-Wiley and Sons, UK.
- Uma Mangal (2014). Childhood and Growing Up, Tandon Publication.

SEED104A	NATURE OF LANGUAGE II	4

Course Overview

This course builds upon the students' existing knowledge of language and linguistic systems. It carries a detailed outline of the notions of grammar in particular and Universal grammar in particular. It also contains discussion about the classroom discourse structure and language pedagogy strategies. It provides a foundational understanding on critical concepts and key strategies for teaching a second or foreign language to learners with various backgrounds and at all levels of proficiency.

Objectives

The course will enable the student-teachers to –

- Gain an understanding of the principles of language pedagogy.
- Apply these principles as needed to various classroom situations and instructional material.
- Understand the nature of language and the structure and development of the English language system.
- Assess the strategy of teaching another language in a multilingual classroom.

Unit I: Grammar and Writing

Prescriptive and Descriptive grammars, Universal Grammar, Parts of Speech, Grammatical gender, history of writing, syllabic and alphabetic writing, speech and writing,

Unit II: Classroom and Discourse Analysis

Organization of discourse; Classroom discourse: Structure and nature; Structure of a poem, story and essay; Interpreting and teaching a text.

Unit III: Language Pedagogy

Language Teaching Paradigms; Approach, Method and Techniques; Different Methods of Language teaching.

Unit IV: Multilingualism in India

Language families of India; Multilingualism in India; Second Vs Foreign Language; Strategies of teaching a Multilingual Classroom.

Suggested Readings

- Fromkin, V., Rodman, R., & Hyams, N. M. (2007). An introduction to language. Boston, MA: Thomson Wadsworth.
- Mesthrie, Rajend and Rakesh, M. Bhatt (2008). World English: The Study of New Linguistic Varieties. Cambridge: Cambridge University Press.

SEED106A	CORE MATHEMATICS II	4

Course Overview

This course enables students to think about various situations where we use functions. Students shall learn how to use and express mathematically some elementary functions such as linear and exponential. Students shall learn methods of determining unknowns to solve linear equations, and that will enable them to solve many daily life problems. Polynomials in one variable are also part of this learning programme. Students shall learn to find out roots of polynomials and their properties. Students shall also acquire data handling skills. In particular, they will be learning graphical representation of data, and use of mean, median and mode.

Objectives

The course will enable the student to –

- Understand functions and use them in various situations.
- Use of linear equations in daily life problems.
- Find solutions of quadratic equations.
- Represent data graphically.

Unit I: Functions

- Linear and exponential Functions
- Function domain and range
- Interpreting the graph of a function
- Linear and exponential Models - comparing growth rates
- Piecewise functions
- Graphing absolute value functions
- Using functions and graphs to solve problems

Unit II: Polynomials

- Polynomials in One Variable
- Zeroes of a Polynomial and its Geometrical Meaning
- Relationship between Zeroes and Coefficients of a Polynomial

- Remainder Theorem
- Factorisation of Polynomials
- Algebraic Identities

Unit III: Equations

- Pair of Linear Equations in Two Variables
- Solution of a Pair of Linear Equations (Graphical and Algebraic)
- Equations Reducible to a Pair of Linear Equations in Two Variables
- Solution of a Quadratic Equation
- Nature of Roots of a Quadratic Equation (Real and Complex)

Unit IV: Data Handling

- Collection of Data
- Presentation of Data
- Graphical Representation of Data
- Measures of Central Tendency (Grouped and Ungrouped Data)
- Data Distributions

Practicum

1. To verify the identity $a^2 – b^2 = (a + b)(a – b)$ by paper cutting and pasting.
2. Learning geometrical representation of the factorization of the following quadratic polynomials: $x^2 + 5x + 6$ and $x^2 – 5x + 6$
3. To verify the identity $(a+b)^3 = a^3 + b^3 + 3a^2b + 3ab^2$ geometrically by using sets of unit cubes.
4. To obtain a linear equation and draw a graph which represents the linear equation.
5. To verify the Pythagoras Theorem by the method of paper folding, cutting and pasting
6. Frequency of letters/ words in a language: Analysis of a language text using graphical and pie chart techniques.
7. To create graphs of functions on the same coordinate plane.

Suggested Readings

- Aggarwal, M. L**.** (2019).Laboratory Manual Mathematics (Activity Based) - IX - X **,**Avichal Publishing Company; 4th Edition.
- Benton, D. James**,** Living Math: Seeing mathematics in everyday life, Amazon Asia-Pacific Holdings Private Limited
- Bolt, Brain and Hobbs, David (1990). 101 Mathematical Projects, Cambridge University Press: New York.
- Guidelines for Mathematics Laboratory in Schools Class X, Central Board of Secondary Education.
- Haigh, John, Mathematics in Everyday Life, Springer; 1st edition (2016)
- NCERT, Exemplar Problems for Class IX – X.
- NCERT, Mathematics, Textbook for Class IX – X.
- The Teaching of Secondary School Mathematics (1970): XXXIII Yearbook of NCTM Washington.
- William L. Hays, Holt, Rinehart and Winston (1965). Statistics for Psychologists. New York.

SEED108A	CORE NATURAL SCIENCE II	4

Course Overview

The course will help the students receive knowledge which will help them remain healthy, safe and aware of their multiple-dependencies on the environment. This course in science will help them to develop the skills that will enable them to assess whether the information they receive from the media, advertisers, journalists and politicians is reliable and evidence-based, further the students will engage with ideas that help them to philosophically consider their own place in the Universe.

Objectives

The course will enable the student-teachers to -

- Understand the power and processes of human eye.
- Understand difference between Acids, Bases and Salts, Metals and Non-metals.
- Gain an understanding of nutrition in plants and animals.
- Sensitise the students with sustainable management of natural recourses.

Unit I: The Human Eye and Colourful World, Light and its Effects

Human Eye and Power of Accommodation, Defects of Vision and their correction

Light - Reflection and Refraction, Refraction of Light through a Prism, Atmospheric Refraction, Scattering of Light and Tyndall Effect

Unit II: Acids, Bases and Salts, Metals and Non-metals

Acids, Bases and Salts: Chemical Properties, Commonality in Acid and Bases, Importance of pH in everyday life

Metals and Non-metals: Physical and Chemical Properties

Position of Elements in Modern Periodic Table

Unit III: Life Processes in Plants and Human Beings

- Nutrition
- Digestion
- Respiration
- Transportation

- Excretion

Unit IV: Sustainable Management of Natural Resources

- 5 R's to save the environment - Refuse, Reduce, Reuse, Recycle, Repurpose
- Management of Natural Resources
- Forests and Wild Life
- Water for all
- Coal, Petroleum and other Resources

Suggested Readings

- Driver, Rosalind, Guesne, E. and Tibergien, A. (Eds.) (1985). Children's Ideas in Science, Open University Press: London.
- Eklavya (1978). Bal Vigyanik, Class 6, 7, 8, Madhya Pradesh Pathyapustak Nigam: Bhopal.
- Esler W. K. (1973). Teaching Elementary Science, Wads Worth: California.
- Gega, Peter (1970).Science in Elementary Education, Wiley & Sons: New York.
- Jennings, Jerry (1980). The Young Scientist Investigates, Book I & II, Oxford University Press: London
- Keetow, W. T. and Gould, J. L. (1986). Biological Science, W. W. Norton: New York.
- NCERT Class X Textbook, NCERT, New Delhi.
- Rogers, E. M. (1960). Physics for the Inquiring Mind. Princeton, University Press: Princeton.

SEED110A	CORE SOCIAL SCIENCES II	4

Course Overview

Social science, in its broadest sense, is the study of society and the manner in which people behave and influence the world around us. It tells us about the world beyond our immediate experience, and can help explain how our own society It provides vital information for governmental machinery and policymakers, local authorities, non-governmental organisations and, etc.

Objectives

The course will enable the student-teachers to -

- Understand various aspects of interactions between resources and human life.
- Understand the process of social change in India
- Prepare the student for a deeper understanding of economic and social events.

Unit I: Contemporary India

- The resources and development,
- Water resources,
- Agriculture,
- Minerals and
- Energy resources,
- Manufacturing industries,
- Life lines of national economy.

Unit II: Indian Economy

- The sectors of economic activities,
- Comparing the three sectors, Primary, Secondary and Tertiary sectors in India,
- Divisions of sectors as organized and unorganized,
- Sectors in terms of ownership as Public and Private sectors.

Unit III: Liberalization, Privatization and Globalization

- External factors,
- Economic reforms (1990s) Structural Adjustment and Programme,
- Foreign trade and interaction of market.

Unit IV: Practicum

- Interconnections are to be drawn between various disciplines of social sciences through project work like slum setting in terms of economics, subsistence, politics, history etc.

Suggested Readings

- Brass, Paul (2003). The Politics of India Since Independence, Cambridge University Press.
- Chandra, Bipan (2009). History of Modern India, Orient Blackswan.
- Chandra, Bipan (2016). India's Struggle for Independence: 1857-1947, Penguin India.

SEED112A	SCHOOL EXPOSURE II	2

Course Overview

The School Exposure II Programme shall be carried out during the second semester in local/nearby school or schools. For this, the student may be placed in regional language medium schools; and the rest may be placed in Government, Private, Urban, Rural and Schools for challenged learners. A student teacher needs to visit at least two types of schools: in the first week to one type of school; and in the second week to another type of school. A brief orientation programme can be arranged before sending the student-teachers to schools to acquaint them with the objectives and modalities of such programme. During this programme, the student-teachers will undertake the different activities in different schools, ensuring maximum participation of the students in all the activities..

Objectives

The course will enable the student-teachers to -

- Interact with elementary school children.
- Explore creative ways of organizing activities for children.
- Reflect upon their experiences.

Student-teachers will undertake the following activities and prepare a report of the same.

Activity 1: Planning and executing an indoor game

Activity 2: Planning and executing morning assembly

Activity 3: Spot games like spelling bee / word formation

Activity4: Organizing a game with a set of students from another class

Activity 5: Organizing a competition on extemporary speech or Just a minute games

Activity 6: Visiting the garden and nurturing the plants and cleaning the area.

Activity 7: Observing a demo class and giving report

Activity 8: Solving a problem related to teaching-learning process.

Scheme of Studies and Syllabi for B.Ed. Programme as per Choice Based Credit System (CBCS)

Semester III			
S.No.	**Course Code**	**Course Title**	**C**
1	SEED213A	Cognition and Learning	4
2	SEED215A	Language Acquisition	4
3	SEED217A	Observing Children	2
4	SEED219A	Self-Development Workshop	2
5	SEED221A	Service Learning	2
*Liberal Course (Optional I)			
6	SEED223A	English I	4
	SEED225A	Hindi I	
	SEED227A	Chinese I	
	SEED229A	Mathematics I	
	SEED231A	Physics I	
	SEED233A	Chemistry I	
	SEED235A	Biology I	
	SEED237A	History I	
	SEED239A	Political Science I	
	SEED241A	Geography I	
	SEED243A	Economics I	
		Total	**18**

SEED213A	COGNITION AND LEARNING	4

Course Overview

Cognition is the basis of educational and allied activities in a student life. Yet, not enough settings, including educational settings, consciously apply cognitive principles. The value of including cognition in the education of all beings is clear, developing thinking and knowledge. It is of particular importance to incorporate cognitive theory into the training of teachers to further application of cognition in the instruction of all students. This course will focus on the principles of cognition and learning and factors responsible for the development of understanding of cognition and critical thinking in.

Objectives

The course will enable the student-teachers to -

- Conceptualise the terminologies used in the course.
- Develop basic knowledge of cognitive psychology.
- Develop an ability to differentiate cognition works from attention, sensation, perception, action, language processes, problem solving and thinking to learning and memory.

Unit I

Cognition and approaches to cognition; individual and cultural differences

Elementary cognitive processes - sensation, perception and attention.

Unit II

How children learn and remember: basic processes, strategies, knowledge, metamemory; current issues.

The developing mind: concepts and concept formation; developing concepts of time, space, number, relationship etc.

Unit III

Child as a problem solver: reasoning and judgement, choice - Piagetian and Neo-Piagetian perspectives; nurturing creativity and developing problem solvingskills.

Unit IV

Alternative conceptions of learning: Factors contributing to learning - personal and environmental

Child's personal and social word - cognition and emotion.

Suggested Readings

- Benjafield, J. G. (1992). Cognition, Prentice Hall : Englewood Cliffs.
- Brown, J. S., Collins, A and Duguid, P. Situated (1989). Cognition and the Culture of Learning, Educational Researcher, 18: 32-42.
- Carey, S. (1985). Conceptual Change in Childhood, MIT Press : Cambridge.
- Donaldson, M. (1978). Children's Minds, Fontana/Collins: London.
- Ginsburg, H. P. and S. Opper (1988). Piaget's Theory of Intellectual Development: An Introduction, Prentice Hall: Englewood Cliffs.
- Lefrancois, G. (1994). Psychology for Teachers, Wadsworth : California.
- Lefrancois, G. (1994). Psychology for Teachers, Wadsworth: California.
- Rogoff, B. (1990). Apprenticeship in Thinking, Oxford University Press: New York,
- Rosser, Rosemary A. (1993). Cognitive Development: Psychological and Biological Perspectives, Allyn and Bacon: USA.
- Seigler, R. S. (1986). Children's Thinking, Prentice Hall : Englewood Cliffs.
- Seigler, R. S. (1986). Children's Thinking, Prentice Hall : Englewood Cliffs.
- Seigler, R. S. (1986). Children's Thinking, Prentke-Hall : Englewood Cliffs, Chap. 2.
- Smith, L. (1992). Jean Piaget: Critical Assessments, Routledge: London, Chap. 59.
- Vygotsky, L.S. (1978). Mind in Society, Harvard University Press: Cambridge, Chapter 6.
- Wertsch, J. V. (1985). Culture, Communication and Cognition: Vygotskian Perspectives, Cambridge University Press: Cambridge, Chapter 6,7,12 and 15
- Wolfolk, A. (1987). Educational Psychology, Prentice Hall : Englewood Cliffs.
- Wood, D. (1998). How Children Think and Learn, Basil Blackwell : Oxford, Chap.2.
- Woods, D. (1988). How Children Think and Learn, Basil Blackwell : Oxford, Chapter

SEED215A	LANGUAGE ACQUISITION	4

Course Overview

For quite a long time, language teaching did not regard learning of language from the learners' point of view. It was assumed that the teacher teaches and the learner learns. Whatever the teacher 'gives' to the learner, the learner takes in, and then produces it as language output. It was largely during the twentieth century, with the growth of thinking in areas of psychology, linguistics and also the biological sciences, those insights into language learning grew to create a progressively better understanding both of the nature of language itself and the nature of learning.

This course will be an introduction to major aspects of second language acquisition theories. The Course topics cover various factorsthat influence the successful acquisition of another language. The focus will be on linguistic, cognitive, personality and socio-cultural features of second language acquisition. You are encouraged to critically evaluate, reflect and build upon strategiesthat contribute positively to second language acquisition.

Objectives

The course will enable the student-teachers to -

- Define and elucidate the concept, nature & structure of language;
- Describe language and cognition;
- Explain theories of language acquisition and their limitations;
- Explain biology of language acquisition.
- Appreciate the relationship between language, mind and society.
- Acquaint them with the process of language acquisition and learning.
- Develop sensitivity and competency towards catering to a multilingual audience in school.

Unit I: Language and Cognition: Cognitive prerequisites for language acquisition; biological foundation; language and thought, innatist hypotheses; cognitive social and linguistic development; Piagetian and Vygotskian perspectives.

Unit II: Language Development: The earliest stage and the babbling period; stages of language development; the role of mothers and caretaker speech; phonology; morphology; syntax and semantics; sociolinguistic aspects.

Unit III: Comprehension, Production& Formal means of Language Acquisition: Perceptual strategies; perception of speech and comprehension; notions of complexity; speech production; encoding and performance measure; the role of errors in language production. learning to read and understand; measures of readability; schema theory; using cloze, dictation and translation with children; mechanics of writing; representational systems; teaching writing.

Unit IV: Language Acquiring Disorder: Concept of language: meaning & nature of language, linguistic principles: process of acquisition of language, learning about language by studying language disorders; brain structure and functions; inhibitions; stuttering; aphasia; language among the mentally retarded**.**

Suggested Readings

- Agnihotri, R.K. & Khanna, A.L. (Eds.) (1994). Second language acquisition. New Delhi:Sage Publications.
- Agnihotri, R.K. (1999). Bachchon ki bhashaa seekhne ki kshamata, Bhag 1 or 2. Shakshik Sandarbh. Bhopal: Eklavya.
- Agnihotri, R.K. (2007). Hindi: An Essential Grammar. London: Routledge
- Agnihotri, R.K. (2007). Towards a pedagogical paradigm rooted in multiliguality. International Multilingual Research Journal, Vol.(2) 1-10
- Agnihotri, R.K. and Vandhopadhyay, P.K. (Eds.) (2000). Bhasha, bhubhashita or hindi: Ekanth samvaad, New Delhi: Shilalekh
- NCERT (2005). National Curriculum Framework (NCF). New Delhi: NCERT.
- Reading Development Cell, NCERT (2008). Reading for meaning. New Delhi: NCERT.
- Yule, G. (2006). The study of language. Delhi: Cambridge University Press.

SEED219A	SELF-DEVELOPMENT WORKSHOP	2

Course Overview

As an individual in society one has different identities – gender, relational, cultural – andit is important to address one's implicit beliefs, stereotypes and prejudices resulting fromthese identities. It is important for the student-teachers to be aware of their identities andthe political, historical, and social forces that shape them. The course will make use ofpersonal narratives, life stories, group interactions, film reviews – to help explore one'sdreams, aspirations, concerns, through varied forms of self-expression, including poetryand humour, creative movement, aesthetic representations, etc.The course will address aspects of development of the inner self and the professionalidentity of a teacher. This shall enable student-teachers to develop sensibilities,dispositions, and skills that will later help them in facilitating the personal growth of theirown students while they teach. It is important for student-teachers to develop socialrelational sensitivity and effective communication skills, including the ability to listen andobserve.

Objectives

The course will enable the student-teachers to -

- Explore the self for greater awareness, personal growth and reflective thinking.
- Develop insight into the various dimensions of the self-perceptions and assumptions about and attitude towards: people, children in particular; and social issues.
- Learn to be self-critical, questioning and reflective about our thoughts, actions and reactions.
- Develop insight into children's ways of thinking and learning and to explore ways to bridge the gap between adult and child.
- Develop skills for effective communication and the capacity to listen, empathies and relate.

Workshops

A series of workshops should be conducted over a year, under the supervision and guidance of professionals, trained for the purpose. Broadly, these workshops should address the following:

1. Exploring the Self

Ability to listen and observe; dreams and fantasy; personal and professionals aspirations; factors influencing identity formation; views on gender issues; personal; families and social

conflicts; understanding social issues; projecting and building images; exploring ethics values ;developing empathy

2. Understanding Our Own Childhood

Articulating childhood memories and experiences-fantasy, longing, hurt, joy, recognition; major influences in childhood; visualizing the limitations and potential of one's own childhood; listening to and empathizing with other childhood experiences, discovering similarity in needs and feelings , discovering differences in nature and experiences; getting in touch with childhood feelings.

3. Fear and Trust

Observing and understanding feelings of fear and trust in the past and present; the influence of such feelings in personal and social attitude; analysis of the repercussion of fear and trust in school; observing the role of fear and trust in stiffing or facilitating creativity and learning exploring alternative interventions.

4. Communication

Observing the role of listening, attention and empathy; observing and analyzing information gathering and exchange; exploring personal and social relationship; analyzing the role of the media; understanding communication in friendship, in the family, in the community; exploring the role of teacher as a communicator, in establishing a relationship with the child.

Time Frame

Each student will be required to attend all workshops over one semester.

SEED221A	SERVICE LEARNING	2

Course Overview

Service learning is a form of experiential learning; there are key areas where service-learning departs from traditional models of experiential learning. For example, service-learning has a greater emphasis on reciprocal learning and reflection. Servicelearning pedagogy ensures that goals and objectives as well as overall curriculum structure are premised on collaboration. Service learning has proven to be an innovative and effective education methodology that is grounded in scholarship. The Kolb model describes the key stages that service learners cycle through in their educational processes: 1) concrete experiences, 2) reflective observation, 3) abstract conceptualization, and 4) active experimentation. Each of these four stages is an integral part of service-learning that must be fully embraced by students, institutions, and community partners in order for service-learning's multifaceted goals to be achieved. Service-learning takes into account the needs of adult learners and uses appropriate methods and resources to facilitate meaningful learning and discovery.

Objectives

The course will enable the student-teachers to -

- Practice skills and test classroom knowledge through related service experiences in the local community.
- Provide needed assistance to community agencies and to the people served by the agencies.
- Provide leadership training and development opportunities for the Service Learning and encourage future community work and social service career exploration.
- Enhance subject matter learning in applying classroom knowledge to practical experience.
- Develop commitment to service, social justice, and community involvement and enable them to work productively with diverse communities.

Procedure: The purpose of service learning is to create consciousness among the local villagers about various emerging social issues related to their basic survival. In order to complete the programmme, teacher trainees will visit the adopted village with the faculty in charge. During visit the teacher trainees will complete the following activities listed below and submit the report as per the guidelines suggested by the faculty in charge.

Suggested Activities

Activity I Environmental awareness (Guest lectures, Poster Making, Slogan writing, Conducting awareness discussions among the students and with specific groups).

Activity 2: Plantation (Awareness sessions; planting plants).

Activity 3: Education of socially and educationally backward children.

Activity 4: Proper use & disposal of waste materials (Awareness sessions; Implementation).

Activity 5: Swachha Bharat Abhiyan.

*LIBERAL COURSE (OPTIONAL I)

SEED223A	ENGLISH I	4

Course Overview

This course introduces students to the study of poetry and its cultural, social, and historical contexts. Content includes terminology and methods for analysing and evaluating poetry including form, thematic development, and style. It contains selected poems of many great poets of various genres which will help the students develop an aptitude for understanding and interpreting a wide range of poetry.

Objectives

The course will enable the student-teachers to –

- Recognize poetry from a variety of cultures, languages and historic periods.
- Recognise the literary features (allegory, sonnet, ode, epic, ballad, lyric, and dramatic monologue, epic) in a given text.
- Understand and appreciate poetry as a literary art form.
- Develop their vocabularies.
- Appreciate language and its connotations and denotations.

Unit I

Poetry: Forms and types of Poetry (allegory, sonnet, ode, epic, ballad, lyric, dramatic monologue, epic)

Unit II

Stanza forms in Poetry: Heroic couplet, Spenserian stanza, Blank verse, Terza Rima

Unit III

William Shakespeare: Sonnet 144

Edgar Allan Poe: To Science

Thomas Gray: Elegy Written in a Country Churchyard

Unit IV

Nissim Ezekiel: Night of the Scorpion

Aga Shahid Ali: Call me Ishmael tonight

John Keats: La Belle Dame sans Merci

Suggested Readings

- Abrams, M. H., & Harpham, G. G. (1999). A glossary of literary terms. Boston, Mass: Thomson Wadsworth.
- Ali, Aga Shahid (2005). Call Me Ishamael Tonight – A Book of Ghazals. London. WW Norton.
- Bacon, Francis (1986). The Essays. London. Penguin Classics.
- Boulton, Marjorie (2006). Anatomy of the Novel. New Delhi, Kalyani Publishing.
- Gray, Thomas (2011). An Elegy Written in a Country Churchyard ... the Artists' Edition. Paperback. British Library, Historical Print Editions.
- Night of Scorpion – Nissim Ezekiel (2018). *www.scholarspark.com.,* Retrieved 18 August 2018.
- Poe, Edgar Allan; Allen, Hervey (1938). The complete tales and poems of Edgar Allan Poe. New York : The Modern Library,
- Shakespeare, William (2009). Sonnets, Vintage Classics.Paperback.
- Strachan, J. (2006). The Poems of John Keats: A Routledge Study Guide and Sourcebook (Routledge Guides to Literature) Paperback.

SEED225A	HINDI I	4

<u>खण्ड - एक</u> : भाषा एवं साहित्य गद्य भाग

- भाषा की परिभाषा, भाषा एवम मानव जीवन
- भाषा और भाषा वैविध्य : -
  - भाषा का मौखिक और लिखित रूप
  - क्षेत्रीय / प्रादेशिक बोली , समाज , शैली एवं जनसंचार माध्यम के स्तर पर भाषा के विविध रूप
  - मानक भाषा की संकल्पना एवं मानक भाषा के रूप में हिंदी का विकास (ध्वनि, शब्द , व्याकरण , अर्थ, लिपि, और वर्तनी के स्तर पर) भाषाई अशुद्धि

खण्ड - दो : भाषा का प्रायोगिक पक्ष, संचार तकनिकी एवं आत्मविश्वास

- संचार तकनीकी : अवधारणा, प्रकृति, प्रकार , कार्य एवं संभावनाएं
- भाषाई कौशल विकास में सूचना एवं संचार तकनीकी की भूमिका
- ई -मेल लेखन, बायोडाटा लेखन पत्र लेखन , समूह विमर्श , एवं प्रस्तुतीकरण
- सामाजिक संवेदना एवं जागरूकता के विकास में भाषा मीडिया की भूमिका
- व्यक्तित्व एवं आत्मविश्वास के विकास में भाषा एवं संचार माध्यम की भूमिका

खंड - तीन रचनात्मक लेखन एवं अनुवाद

- रचनात्मक लेखन : परिभाषा , प्रतिक्रिया , उपयोगिता
- रचनात्मक लेखन के विविध रूप :- कविता , कहानी , उपन्यास , निबंध , नाटक , जीवनी , आत्मकथा
- अनुवाद : अर्थ , परिभाषा , स्वरुप , महत्व
- अनुवाद के तत्व : श्रोत भाषा , लक्ष्य भाषा , सम्प्रेषण कोशगत अर्थ , अनुवाद सामग्री भावार्थ
- अनुवाद स्वरुप एवं प्रक्रिया :- शाब्दिक अनुवाद , भावानुवाद , छायानुवाद, सारानुवाद , अनुवाद प्रक्रिया के आयाम एवं प्रमुख पक्ष

खंड चार : - हिन्दी भाषा और साहित्य का इतिहास

- आदिकाल (प्रारम्भ) से लेकर आधुनिक कल तक सभी प्रमुख धाराओं का संक्षिप्त परिचय , प्रवृत्तियाँ / विचारधाराएं

- सन्दर्भ ग्रन्थ : 1 हिन्दी साहित्य का इतिहास : -
- डॉ० हजारी प्रसाद द्विवेदी (राजकमल प्रकाशन दिल्ली)
- हिन्दी साहित्य का इतिहास : राम चंद्र शुक्ल (राजकमल प्रकाशन दिल्ली)
- रचनात्मक लेखन : संपादक :- प्रो0 रमेश गौतम (भारतीय ज्ञानपीठ दिल्ली)
- अनुवाद : अवधारणा एवं अनुप्रयोग : डॉ. चंद्र बहन रावल (नेशनल पब्लिशिंग हॉउस दिल्ली)
- अनुवाद सिद्धांत एवं अनुप्रयोग : हिन्दी माध्यम कार्यान्वयन निदेशालय

SEED227A	Chinese I	4

Course Overview

This course aims to equip students with fundamental skills in the Chinese language, focusing on pronunciation, character recognition, comprehension of basic utterances, and reproduction of introductory dialogues. Throughout the course, students will engage in various activities designed to develop their proficiency in Chinese communication.

Objectives

The course will enable the students to:
1. Pronounce and read Chinese
2. Recognize Chinese Characters and comprehend it's meaning
3. Understand basic utterances in Chinese
4. Reproduce basic Chinese introductory communication

Unit I : Pronouncing Initials and finals of Chinese sound chart

- Knowledge of phonetic system as per IPA of a foreign language
- Ability to pronounce the unique sounds and tones of Chinese language

Unit II:Reading of Chinese Characters with accurate sounds & tones

- Knowledge of phonetic system as per IPA of a foreign language
- Ability to pronounce the unique sounds and tones of Chinese language and development in spoken Chinese ability

Unit III: Comprehension of Chinese utterances and situational dialogues

- Comprehension of a foreign culture through Chinese text and dialogues
- Comprehension ability of Chinese dialogues and communications
- Awareness of Gender roles through Chinese script

Unit IV: Reproducing grammatical correct introductory dialogues in Chinese

- Greeting in a foreign language-Chinese
- Tourism Industry- Receiving Chinese clients and greeting them.

- Form grammatically correct Chinese sentences and produce content in Chinese language.
- Awareness of Gender roles through Chinese characters
- Knowledge of moral value system of a foreign community through language

Suggested Readings

- Mandarin Chinese Phonetics: A Practical Guide for English Speakers" by Lin, Chuanren
- "Chinese Pronunciation: A Handbook for Teachers and Learners" by Yen-Hwei Lin
- "Yufa! A Practical Guide to Mandarin Chinese Grammar" by Wen-Hua Teng
- Mandarin Chinese for Beginners: Mastering Conversational Chinese (Fully Romanized and Free Online Audio)" by Yi Ren
- "Survival Chinese: How to Communicate Without Fuss or Fear Instantly! (A Mandarin Chinese Language Phrasebook)" by Boye Lafayette De Mente
- "Chinese Business Etiquette: A Guide to Protocol, Manners, and Culture in thePeople's Republic of China" by Scott D. Seligman

SEED229A	MATHEMATICS I	4

Course Overview

This course enables students to understand elementary properties of sets. Sets help us to say which collection of objects is bigger and arrange them in order. Further, students shall learn how linear inequalities can be used to describe real life problems. They would be able to solve these problems both graphically and mathematically. Students shall also learn elementary statistical concepts such as mean, variance, standard deviation and analysis of frequency distributions. Moreover, students shall consider a real-world problem and write it as an equivalent mathematical problem. They then solve the mathematical problem, and interpret its solution in terms of the real-world problem.

Objectives

The course will enable the student-teachers to –

- Understand elementary properties of sets.
- Use linear inequalities to describe real life problems.
- Grasp elementary statistics ideas.
- Write an equivalent mathematical formulation of a real-world problem

Unit I: Sets

- Sets and their Representations
- Types of Sets: Empty, Finite and Infinite, Equal, Power, Universal
- Venn Diagrams
- Operations on Sets
- Complement of a Set
- Practical Problems on Union and Intersection of Two Sets

Unit II: Linear Inequalities

- Algebraic Solutions of Linear Inequalities in One Variable and their Graphical Representation
- Graphical Solution of Linear Inequalities in Two Variables
- Solution of System of Linear Inequalities in Two Variables

Unit III: Elementary Statistics

- Range
- Quartile and Mean Deviation
- Variance and Standard Deviation
- Analysis of Frequency Distributions

Unit IV: Mathematical Modelling

- Review of Word Problems
- Some Illustrations of Mathematical Models
- The Process of Modelling, its Advantages and Limitations
- Stages in Mathematical Modelling
- Principles of Mathematical Modelling

Practicum

1. To find the number of subsets of a given set and verify that if a set has n number of elements, then the total number of subsets is 2^n .

2. To represent set theoretic operations using Venn diagrams.
3. To verify distributive law for three given non-empty sets A, B and C, that is, $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$
4. To identify points that satisfies inequalities or a system of two inequalities.
5. To Determining appropriate parameters to produce a model.
6. To solve transportation and assignment problem.
7. To get a particular information from the given data using statistical techniques.

Suggested Readings

- Gupta, S. C. and Kapoor, V. K. (2014). Fundamentals of Mathematical Statistics, Sultan Chand & Sons.
- Hosking, Roger J. and Venturino, Ezio (2008). Aspects of Mathematical Modelling: Applications in Science, Medicine, Economics and Management, Birkhäuser.
- Illner, Reinhard (2011). Mathematical Modelling, Orient Blackswan Private Limited - New Delhi.
- NCERT, Exemplar Problems for Class XI – XII.
- NCERT, Mathematics, Textbook for Class XI – XII.
- Pinter, Charles C. (2014). A Book of Set Theory, Dover Publications Inc.
- Robert, R. Stoll, Set Theory and Logic, Dover Publications Inc.; New Edition.

SEED231A	PHYSICS I	4

Course Overview

Physics is the branch of science concerned with the properties of matter and energy and the relationships between them. It is based on mathematics and traditionally includes mechanics, optics, electricity andmagnetism, acoustics, and heat.Physics is an experimental science and the scientific method emphasizes the need of accurate measurement of various measurable features of different phenomena or of manmade objects.The study of Physics I involves the study of basic concepts in Mechanics, Atomic Structure, Electrostatics, Magnetostatics and Electrodynamics.

Objectives

The course will enable the student-teachers to -

- Introduce the basic concepts of Newtonian mechanics.
- Enable the students to understand atomic structure and various principles and models governing the atomic physics.
- Introduce basic concepts of electricity and magnetism.

Unit I: Mechanics

Scalars and vectors, addition of vectors, Newton's laws of motion, forces and pseudo-forces, work-energy theorem, conservative forces, conservation of energy, conservation of linear momentum, Centre of mass, particle collision (in two dimensions). Rotational motion, torque and angular momentum. Conservation of angular momentum. Law of gravitation, inertial and gravitational masses, motion of planets and satellites, Kepler's laws.

Unit II: Atomic Structure

Bohr's model of one electron atom, Wilson –Sommerfeld quantization rules, Bohr's correspondence principle, orbital and spin magnetic dipole moment, Larmor precession, space quantization, vector model of atom-coupling of orbital and spin angular momentum, L-S and j-j coupling.

Unit III: Electrostatics

Electric charges, Coulomb's law, Principle of superposition, electric field, Field due to a linear charge, field due to an electric dipole, Electrostatic potential, Flux, Solid angle, electric lines of forces, Gauss' law of electrostatics and its applications.

Unit IV: Magnetostatics and Electrodynamics

Magnetic Field, Magnetic flux density, Biot-Savart law, Ampere's law, Gauss' law of magnetism, Faraday's law of induction, Lenz's law, Maxwell's equations, physical significance of Maxwell`s equations. Electromagnetic waves.

Practicum

1. To find the time period of the bar pendulum.

2. To determine the value of acceleration due to gravity using Kater`s pendulum.
3. To determine the frequency of A.C. mains with sonometer.

Suggested Readings

- Avadhanulu, M. N. and Kshirsagar, P.G. A Textbook of Engineering Physics.
- Beiser, A. Concept of Modern Physics.
- Mathur, D.S. Mechanics.

SEED233A	CHEMISTRY I	4

Course Overview

This course deals with the basic concept of organic chemistry, Stereochemistry principles, theory of Atomic Structure and Characteristics of gases, ideal gases, gas laws. An atom is the smallest constituent unit of ordinary matter that has the properties of a chemical element. This course helps the students to understand the structure of atom on the basis of various models and their atomic spectrum and builds a basic knowledge about the structure of atom. The study of this course will enable the students to understand various types of effects like inductive, electrometric, resonance accounts for stabilization of molecules. This course also deals with the various concept of Stereochemistry for molecules.Further students will develop an understanding of composition of solid, liquid, gas and plasma.

Objectives

The course will enable the student-teachers to -

- Know the stability of organic compounds along with energy states.
- Understand the two dimensional structure of organic compounds on the basis of projection formula
- Acquaint students with the physical properties of electrons regarding their shape, size and position.
- Have knowledge of applicability of different states of matter in our day to day life.

Unit I:Basics of Organic Chemistry

Organic compounds: classification and nomenclature, hybridization, shapes of molecules, influence of hybridization on bond properties, electronic displacements: inductive, electromeric, resonance and mesomeric effects, hyperconjugation and their applications; dipole moment, homolytic and heterolytic fission with suitable examples, electrophiles and nucleophiles; nucleophlicity and basicity; types, shape and their relative stability of carbonations, carbanions, free radicals and carbenes, introduction to types of organic reactions and their mechanism: addition, elimination and substitution reactions.

Unit II:Stereochemistry

Fischer projection, newmann and sawhorse projection formulae and their interconversions; geometrical isomerism: cis–trans and, syn-anti isomerism e/z notations with c. i. p rules, relative and absolute configuration: d/l and r/s designations.

Unit III: Atomic Structure

Bohr's theory, its limitations and atomic spectrum of hydrogen atom, wave mechanics: de broglie equation, Heisenberg's uncertainty principle and its significance, Schrodinger's wave equation, significance of ψ and ψ^2, quantum numbers and their significance, shapes of s, p, d and f orbitals, Pauli's exclusion principle, Hund's rule of maximum multiplicity, Aufbau's principle and its limitations, variation of orbital energy with atomic number.

Unit IV:Gases and Liquids

Characteristics of gases, ideal gases, gas laws, deviation from ideal behavior, van der wall's equation (no derivation but explanation regarding a and b), difference between gases and liquids on the basis of their molecular structure, vapour pressure of liquids, relationship between vapour pressure and boiling point, surface tension, viscosity, their experimental determination and applications.

Practicum

1. Estimation of Fe (II) and oxalic acid solutions using standardized $KMnO_4$ solution.
2. Estimation of Fe (II) solutions with $K_2Cr_2O_7$ using external indicator.
3. Estimation of Cu (II) and $K_2Cr_2\ O_7$ Using sodium thiosulphate solution (Iodimetrically).
4. Estimation of available chlorine in bleaching powder iodometrically.
5. Determination of Surface tension of liquid.

Suggested Readings

- Bahl, A. and Bahl, B. S. Advanced Organic Chemistry, S. Chand and Co. Ltd., New Delhi.
- Bahl, Arun. Essentials of Physical Chemistry, S. Chand Publishing.
- Castellin, Gilbert, W. (1990). Physical Chemistry, Narosa Publishing House/ Addison – Wesley: New Delhi.
- Cotton, F. A. and Wilkinson, G. (1998). Advance Organic Chemistry, John Wiley and Sons: Sussex, Fifth Edition.
- Day, M. And Selbin J. (1972). Theortical inorganic chemistry, East Wst Press: Delhi,.
- Donald, H. Andrews(1970). Introductory Physical Chemistry, McGraw Hill: New York.
- Giri, O. P. et. al. Practical chemistry, S. Chand and company Pvt. Ltd., New Delhi.
- Khosla, B. D. etl al.(1982).A senior practical physical chemistry, R. Chand and CO.: New Delhi.
- Marr, G. and Rockett, B. W. (1972). Practical inorganic chemistry, London; New York: Van Nostrand Reinhold.
- Morrison, R. N. and Boyd, R. N. Organic Chemistry, Dorling Kindersley (India) Pvt. Ltd., Pearson Education.
- Puri, B. R., Sharma, L. R. and Kalia, K. C., Principles of Inorganic Chemistry, Shobhan Lal Nagin Chand & Co., New Delhi.
- Puri, B. R., Sharma, L. R. and Pathania, M. S., Principles of Physical Chemistry, Vishal Publishing Company.

SEED235A	BIOLOGY I	4

Course Overview

Studying biology is the foundation of all characteristics of life on Earth. Apart from creating solutions to the challenges many living organisms face, it paves the way for inventions and discoveries that improve the quality of life. Biology plays an important role in the understanding of complex forms of life involving humans, animals and plants. Understanding these intricate details of life helps humans understand how to care for themselves, animals and plants in the proper manner. Biology helps individuals understand the interaction between humanity and the world. It also develops interests in the lives of living organisms in an effort to preserve them.

Objectives

The course will enable the student-teachers to -

- Understand the primitive and existing life on earth.
- Study the plant and animal kingdom and their interrelationship.
- Make students familiarise with the concept and need of Botanical gardens
- Develop the skills of making aHerbarium.
- Make students aware about the different classification of plants and animals.
- Understand the basic fundamentals of chemical and biological evolution
- Examine and observe various plant and animal species and study their characteristic and identifying features.

Unit I: Diversity of Life

What is living?; Biodiversity; Need for classification; Three domain of life; Taxonomy &Systematics; Concept of species and taxonomical hierarchy; Binomial nomenclature; Tools for study of Taxonomy–Museums, Zoos, Herbaria, Botanical gardens.

Five kingdom classification; Salient features and classification of Monera; Protista and Fungi intomajor groups; Lichens; Viruses and Viroids.

Salient features and classification of plants into major groups- Algae, Bryophytes, Pteridophytes,Gymnosperm and Angiosperm (three to five salient and distinguishing features and at least two examples of each category); Angiosperms- classification up to class, characteristic features and examples.

Unit II: Salient features and classification of animals

Animals- non chordate up to phyla level and chordate up toclasses level (three to five salient features and at least two examples).

Animalae

A) Non-chordata

1. Porifera: Structure and reproduction, e.g. Sycon
2. Cnidaria: morphology and reproduction e.g. Coral
3. Platyhelminthes: morphology, reproduction and its relation to man, e.g. tapeworm.
4. Aschelminthes: morphology and repoduction, e.g. Ascaris.
5. Annelida: morphology and reproduction, e.g. earthworm
6. Arthropoda: morphology and reproduction, e.g. cockroach.
7. Echinodermata: morphology and reproduction, e.g. starfish.

B) Chordata

1. Pisces: generalised account of fish
2. Amphibia: e.g. Frog
3. Reptilia: e.g. Lizard
4. Aves: a general account of birds
5. Mammalia: e.g. rabbit, rat and man

Unit III: Origin of Life

Brief history of chemical evolution of first cell, evolution of heterotrophs and autotrophs, and the advent of oxygen on the earth.

Unit IV: Evolution

Origin of life; Biological evolution and evidences for biological evolution (Paleontological, comparative anatomy, embryology and molecular evidence); Darwin's contribution, Modern Synthetic theory of Evolution; Mechanism of evolution– Variation (Mutation and Recombination) and Natural Selection with examples, types of natural selection; Hardy-Weinberg's principle; Adaptive Radiation; Human evolution.

Practicum

1. Specimens study: Paramecium, Ascaris, Pila, Sea Urchin, Sargassum (alga).
2. Study photographs (em) T- Phage, TMV (Tobacco Mosaic Virus) (e.m.) bacteria.

3. Temporary mounts Sponge: gemmules and spicules Cockroach: mouth parts, trachea Earthworm: septal and pharyngeal. nephridia Slides of bacteria from pond water and curd Structure and movement of Euglena from pend water and Chlamydomonas from rain water puddles.
4. Mushroom: section cutting, study coloured photographs, grow Aspergillus and examine microscopically. Riccia and moss: study details Fern: section cutting (true and false indusium) Pinus: section cutting.
5. Any two families: Solanaceae, Graminae (Arecaceae).
6. Study of any angiosperm, slides of T.S. anther and L.S. ovule.
7. Study and describe three locally available common flowering plants from each of the following families (Solanaceae, Fabaceae and Liliaceae) including dissection and display of floral whorls and anther and ovary to show number of chambers. Types of root (Tap and Adventitious); Stem (Herbaceous and woody); Leaf (arrangement, shape, venation, simple and compound).

Suggested Readings

Zoology

- Adhikari, S. and Sinha, A. K. (1990). Fundamentals of Biology of Animals, Vol.-3. New Central Book Agency: Calcutta. Alexander, R. McNeill. Animals, Cambridge University Piess: Cambridge.
- Audersirk, G. and Audersirk, T. (1992). Biology - Life on Earth, MacMillan: New York.
- Cleveland, P. Hickman (1985). Integrated Principles of Zoology, The C.V. Mosby Co.: London 1970. Dhami and Dhami. Invertebrates, R. Chand & Co.: New Delhi.
- Easton, T. A. and Rischer, C. E. (1995). Bioscope, Charles E. Merill Pub. Co.: Ohio.
- M. A. and Wiggins, J. F. (1970). Animal Types (Invertebrates), Hutchinson Educational London.
- Raven, P. H. and Johnson, G. B. (1996). Biology, Brown Publishers, London, Robinson.

Botany

- Davis, B. D. (1980). Microbiology, Harper and Row: USA.
- De Witt, William. Biology of the Cell - An Evolutionary Approach, W.B. Saunders Co: London, Keeton.

- Pandey, S. N. and Trivedi, P. S. (1995). A Text Book of Botany, Vol. I & II, Vikas Publishing House: New Delhi.
- Pelezar, J. R. (1988). Microbiology, McGraw Hill: New York.
- Vashishta, B. R. (1990). Algae, S. Chand & Company: New Delhi.
- Vashishta, P. C. (1983). Gymnosperms, S. Chand & Company: New Delhi.
- Vashistha, B .R. (1995). Fungi, S. Chand & Company: New Delhi.
- W. T. and Gould, J. L. (1993). Biological Science, Norton W.W. USA.

SEED237A	HISTORY I	4

Course Overview

The course attempts to make students aware about the importance of History as a discipline. It will also talk about the transformations that happened in the past that led to the present day structures and will discuss various sources that constitutes the modern institutions. It will aware the students about the processes of historical enquiry and to persuade them to look for interconnections between structures and processes in History. The course makes no effort to provide students with an exhaustive survey of all the phases of Indian history or the history of any other particular country. The focus is therefore is on the general problems and issues of historical inquiry.

Objectives

The course will enable the student-teachers to -

- Understand the conceptual basis of History as a discipline.
- Acquaint with different approaches to study History.
- Familiarise the students with major historical revolutions their causes and effects.
- Develop understanding of European and Indian history.

Unit I: The Problematic of Historical Interpretation and History

- Understanding History- The conceptual basis of History as a discipline
- The question of historical objectivity and truth
- Historiography - Different Approaches.
- Interpreting Sources- The nature of historical source (archaeological, numismatic, epigraphic, literary, written /oral), problems of interpretation

Unit II: Basis and Characteristics of Different Societal Forms

- Hunting and gathering (Paleolithic, Mesolithic and Neolithic Age)
- Domestication of plants and animals (pastoralism, shifting cultivation)

Unit III: Emergence of States and Causes that led to Revolutions

- Monarchies/ Republics
- A Comparative Study- The absolutist state in Europe, The Mughal state in India, Regional state forms in 18th Century
- Renaissance, Industrialization and Imperialism
- The Democratic Revolution: France
- The Socialist Revolution: Russia

Unit IV: Advent of Europeans and Transfer of Power

- Policies and Programme of Expansion, Instruments of Expansion (Diplomacy & Wars) by British
- Ideology and Governance- Ideology of Raj and Racial Attitudes, First war of Independence of 1857, British Repression and Response, Failure & impact of the First war of Independence of 1857, British Relations with Princely States, The Acts - 1858, 1892, 1919 & 1935, Emergence of Organized Nationalism i.e. Indian National Congress and its Programme, Swadeshi Movement.
- Revolution verses Politics- Gandhian Movement (Nature, Programme, Social Composition), The Revolutionary Movements (Simon Commission, August Offer, Cripps Mission, Cabinet Plan), Communal Politics and Partition of India (Mountbatten Plan, C. Rajagopalacharya Plan), emergence of New India and the transfer of Power

Suggested Readings

- Dev, Arjun and Dev, Indira Arjun (2009). History of the World, Orient Black Swan, New Delhi.

- Hilton, Rodney (Ed.). (1978). The Transition from Feudalism to Capitalism, Verso: London.
- Longworth, Philip (1997). The Making of Eastern Europe: From Prehistory to Postcommunism, Palgrave Macmillan, Gurugram.
- Prasad, Ishwari (2018). A History Of Modern Europe (From 1453 TO 1789 A. D.), Surjeet publication, Delhi.

SEED239A	POLITICAL SCIENCE I	4

Course Overview

The current study of political science fits under the broader category of social sciences. It is specifically related to the study of laws, government, and politics. This course in Political Science explores and examines the connections between the functions of the state and the conditions that it creates. It takes into account human behavior and political thinking. Political science also takes into consideration many other subjects such as economics, sociology, behaviorism, and history, as these fields all affect the role and function of the state in contemporary society.

Objectives

The course will enable the student-teachers to -

- Explain the nature and framework of Politics with reference to traditional, behavioural and post- behavioural developmental era.
- Demonstrate an understanding about the different theories that lead to the formation of state.
- Develop an understanding of important concepts/terminologies in the knowledge domain of political science.

Unit I: Explanatory frame work of politics

- Definition, nature and scope of Political Science,
- Meaning and nature of politics with reference to traditional, behavioural and post-behavioural development.

Unit II: Theories of the origin state

This will talk about the theories that lead to the origin of state i.e.

- Social contract
- Historical
- Evolutionary
- Marxist

Unit III: Sovereignty

- Development of the concept of Sovereignty
- Characteristics of Sovereignty
- Types of Sovereignty
- Austin's theory of sovereignty
- The pluralistic attack on Austin's theory of Sovereignty.

Unit IV: Power

- Meaning and Definition of Power,
- Forms of Power, Political Power, Economic Power, Ideological Power.

Suggested Readings

- Gauba,O.P.(2018). An Introduction to Political Theory, Mayur Publications.
- Heywood,Andrew,Key Concepts to Politics.

SEED241A	GEOGRAPHY I	4

Course Overview

This course will map the growth of Geography as discipline and also provide an overview of Contemporary Geography. Furthermore this course designed to provide an understanding of the four basic environmental realms – the atmosphere, biosphere, hydrosphere, and lithosphere – including their areal differentiations and associations upon the earth's surface. Attention is given to terminology, to classifications, to the physical processes by which the natural environment is developed and governed, to generalizing concepts .Focus of the course is also on global climatic changes and their effects.

Objectives

The course will enable the student-teachers to -

- Understand the need of geography as a recognizable, organized discipline with a central point of view.
- Understand the relevance of geography to the modern society.
- Gain an insight into the origin and evolution of the Earth.
- Understand the four basic environmental realms – the atmosphere, biosphere, hydrosphere, and lithosphere.
- Reflect upon the causes and effects of Climatic changes.

Unit I

Geography as a discipline: The contributions of Varenius, Kant, Reine, Humboldt and Ritter. Influence of Richthofen and Darwin, F. Ratzel etc.

Contemporary geography: Environmentalism, Positivism in Geography. Humanistic Geography. Marxist Geography and critical social theory. Development in Indian Geography.

Unit II

Origin and Evolution of the Earth: Introduction to the solar system, Motions of Earth: Rotation, Revolution, Occurrence of Day and Night; change of seasons; Latitudes and Longitudes.

Earth's Interior: Origin of contents and ocean basis Wagener's Continental drift theory, Theory of Plate Tectonics Earthquakes and Volcanoes, Folding and faulting Origin of the

Earth: Nebular hypothesis (old Theory) and Big-Bang Theory. Evolution of continents, atmosphere and oceans.

Unit III

Constitution of Earth's interior (based on Seismic Evidences), origin of the continents and ocean basins. Wegner's theory of Continental drift and Plate Tectonics. Plate movements and interactions-Volcanism and seismicity.

Unit IV

Climate:Atmosphere: Composition and structure. Insolation and temperature, Atmospheric pressure and winds, Atmospheric moisture, cyclones, classification of climate (Koeppen and Thornthwaite Schemes classification). Global climatic changes: Causes and effects.

Suggested Readings

- Aggarwal, S. N. (1987). Population Problem, Tata McGraw Hill, New Delhi.
- Ahmad, E. (1985). Geomorphology, Kalyani Publishers, New Delhi.
- Alexander, J. W. and Bibson, L. J. (1979). Economic Geography, Prentice Hall, Englewood Cliffs.
- Alexander, J. W. and Hartshorne, T. A. (1988). Economic Geography, Prentice Hall, New Jersey.
- Barry, R. G. and Chorley, R .J. (1976). Atmosphere, Weather and Climate, Methuen, London.
- Berry, B. J. L. et. al. (1987). Economic Geography, Resource use, occasional choices and regional specialization in the Global Economy, Prentice Hall, New Jersey.
- Chorley, R. J. (Ed.) (1973). Directions in Geography, Metheun, London.
- Chorley, R. J. and Hagget, P. (Ed.) (1973). The Changing Nature of Geography, Methuen, London.

SEED243A	ECONOMICS I	4

Course Overview

The introductory undergraduate course teaches the fundamentals of microeconomics provide a solid foundation for economic thinking. This course begins with an introduction to supply and demand and the basic forces that determine equilibrium in a market economy. Next, it introduces a framework for learning about consumer behavior and analyzing consumer decisions. We then turn our attention to firms and their decisions about optimal production, and the impact of different market structures on firms' behavior. The course also includes the factor cost and pricing.

Objectives

The course will enable the student-teachers to -

- Develop a fair idea of economics as a subject.
- Develop an understanding of the basic concepts in Micro Economics
- Construct fundamental knowledge of micro-economic theory
- Think about a number of policy questions relevant to the operation of the real economy and market policies.

Unit I: Introduction to Economics

- Definition and scope of economics
- Forms of economic analysis –
    - Micro vs. Macro
    - Partial vs. General
    - Static vs Dynamic
    - Positive vs. Normative
    - Short run vs. Long run
- Types of economic systems
- Basic concepts of economic problems
- Economic rationality, optimality

Unit II: Demand and Supply

- Concept and types of Demand

- Law of demand
- Concept of utility and utility theory
- Indifference curve approach.
- Concept and types of elasticity of demand
- Elastic and non-elastic goods
- Definition and concept of Supply
- Law of supply, supply function
- Price determination; shift of demand, and supply
- Elasticity of supply; consumer surplus

Unit III: Production Analysis, Costs and Market Structure

- Concepts of Production- production isoquants,
- Returns to factor, returns to scale,
- Law of variable proportions,
- Cost and revenue concepts.
- Market structure and characteristics of perfect and imperfect competition,
- Cartels
- Concept of Dumping

UnitIV: Determination of Factor Prices, Rent, Interest, Wages and Profit

- Concept of rent
- Wages, interest and profit,
- Opportunity cost, Marginal productivity theory
- Labour supply and wage determination
- General Equilibrium and Economic Efficiency
- Market Failure

Suggested Readings

- Chaturvedi, D. D. and Gupta, S. L. Business Economics, Brijwasi Publishers.
- Chopra, P. N. Principles of Economics, Kalyani Publishers.
- Dwivedi, D. N. Managerial Economics, Vikas Publishing House.
- Koutsoyiannis, A. Modern Micro Economics, Macmillan Press Ltd.
- Lipsey, R.G. & Chrystal, K. E. Principles of Economics, Oxford University Press.
- Mankiw, N. Gregory.:Principles of Economics, Cengage learning.
- Mehta, P. L. Managerial Economics, Sultan Chand & Sons.
- Salvator, Dominick. Managerial Economics,McGraw-Hill Book Company.

Scheme of Studies and Syllabi for B.Ed. Programme as per Choice Based Credit System (CBCS)

Semester IV			
S.No.	**Course Code**	**Course Title**	**C**
1	SEED214A	Communication in Teaching-Learning Process	4
2	SEED216A	Logico- Mathematics Education	4
3	SEED218A	Arts in Education	2
4	SEED220A	Yoga Education	2
5	SEED222A	Understanding the Self	2
6	SEED224A	School Attachment Programme and Community Living	2
*Liberal Course (Optional II)			
7	SEED226A	English II	4
	SEED228A	Hindi II	
	SEED230A	Chinese II	
	SEED232A	Mathematics II	
	SEED234A	Physics II	
	SEED236A	Chemistry II	
	SEED238A	Biology II	
	SEED240A	History II	
	SEED242A	Political Science II	
	SEED244A	Geography II	
	SEED246A	Economics II	
		Total	**20**

SEED214A	**COMMUNICATION IN TEACHING-LEARNING PROCESS**	**4**

Course Overview

Communication in Teaching – Learning as viewed as a subject that aids in developing the student into effective communicators, who can efficiently and effectively articulate their thoughts, feelings and emotions. Communication is more than just pronunciation, intonation or articulation. Communication involves the teachers' classroom discourse and interaction that deepen thinking to help students internalize and process subject content. . This course in Communication takes into account the context and purpose for which teachers and students are communicating. Given the emphasis on 21st century competencies, more demands are being made on the students to explain, justify and reason through problem-solving strategies. Teaching is not be seen as a one-sided activity, where in teacher is disseminating information, but two-way with teacher and/or students responding to each other to deepen content learning. The interaction among students as they co-construct knowledge becomes important

too. The students play an active role in recognizing the role of language in meaning making, and see communication as a collaborative activity. Teachers and students co-construct knowledge together, particularly in the subjects that involve multimodal aspects of communication, for example, visual data such as graphs, charts, and statistics.

Objectives

The course will enable the student-teachers to -

- Develop the competencies of students to become effective communicators.
- Acquaint the students with the factors responsible for shaping interaction in the classroom.
- Familiarize the students with the language and ethics of communication in the classroom.
- Develop the reading and writing skills of the students.

Unit I: Teacher as Communicator

- Awareness of audience as a key factor in communication;
- Children as learners;
- Communication and curriculum;
- Using knowledge about learner psychology as a factor in shaping classroom interaction;
- Concept of language acrossthe curriculum;
- Interpreting response in oral interaction;
- Feedback as communication;
- Communication as a factor in Institutional Ethos;
- Communication, language and ethics.

Unit II: Reading as resource

- Reading as resource;
- Choice of readings;
- Analyzing a text from the perspective of students;

- Communication through different media.

Unit III: Writing Skills for Teachers

- Writing letters, applications, reports, minutes, and essays;
- Writing about research;
- Writing annotations,
- References and bibliography;
- Writing journals and reflective diaries, etc.
- Improving one's own language proficiency in oral and written modes: narrating, describing, analyzing;

Suggested Readings

- Grabe, W. & Stoller, F. (2013). Teaching and researching reading. New York, NY: Routledge.
- Hacker, D. J., Dunlosky, J. & Graesser, A. C. (Eds.) (2009). Handbook of metacognition in education. New York, NY: Routledge.
- Hartman, H. J. (Ed.) (2001). Metacognition in learning and instruction: Theory, research and practice. Dordrecht, The Netherlands: Kluwer Academic Publishers.
- HKPISA Centre, The Chinese University of Hong Kong. (2015). The fifth HKPISA report, PISA 2012. Hong Kong: Author. McGregor, T. (2007). Comprehension connections: Bridges to strategic reading. Portsmouth, NH: Heinemann.
- Rose, D. & Martin, J. (2012). Learning to write, reading to learn: Genre, knowledge and pedagogy in the Sydney school. Sheffield, United Kingdom: Equinox Publishing.
- Rozmiarek, R. (2006). Improving reading skills across the content area. California: Corwin Press. Vacca, R. T., Vacca, J. A. L. & Mraz, M. E. (2005). Content area reading: Literacy and learning across the curriculum. Boston, MA: Pearson/Allyn and Bacon.
- Wood, E., Woloshyn, V. E. and Willoughby, T. (1995). Cognitive strategy instruction for middle and high schools. Cambridge: Brookline Books.

Internet Resourses

- EDB One-stop Portal for Learning & Teaching Resources http://www.hkedcity.net/edbosp/
- EDB: Reading to Learn http://www.edb.gov.hk/en/curriculum-development/4-key-tasks/reading-to-lear n/index.html
- EDB: School Library Services http://www.edb.gov.hk/en/curriculum-development/resource-support/sch-lib-se rvices/index.html
- OECD: Programme for International Student Assessment (PISA) http://www.pisa.oecd.org
- Programme for International Student Assessment Hong Kong Centre: "Programme for International Student Assessment" http://www.fed.cuhk.edu.hk/~hkcisa/

SEED216A	LOGICO- MATHEMATICS EDUCATION	4

Course Overview

"Logico-mathematical knowledge" is a term invented by Piaget, the renowned educational researcher. He wanted to make the distinction between different kinds of knowledge, based on their sources.Then there is logico-mathematical knowledge, which is constructed inside the brain. Logico-mathematical knowledge is the knowledge of relationships, and relationships don't exist until we make them. It's the sort of knowledge only humans (and perhaps some very intelligent animals to a limited degree) can make. Logico-mathematical knowledge is "real magic"!…the creation of "something" where there used to be "nothing." Relationships include all abstract nouns, "mathematical" or not: number, area, length, equal…as well as fairness, love, peace, justice. Logico-mathematical knowledge is constructed by each individual, inside his or her own head. It doesn't come from the outside. It can't be seen, heard, felt or told. It develops as each person makes logical connections. Schooling and other experiences stimulate the development of logico-mathematical knowledge, but the actual neural connections which represent this knowledge are built from the inside.

Objectives

The course will enable the student-teachers to -

- Understand the nature and dynamics of logico-mathematical thinking in relation to developmental theories of Piaget, Bruner and Vygotsky.
- Study the pedagogical consideration with reference to learning theories of Piaget and Vygotsky.
- Study Mathematics in the context of school.
- Familiarise with pedagogical concepts of Mathematics.

Unit I

Nature of children's logico-mathematics thinking: theories of Piaget, Bruner,

Dienes and Vygotsky; intuitive mathematics; mental mathematics; cultural differences and specificities.

Unit II

Critical study of some pedagogic considerations with reference to learning theory and practice: readiness; consolidating mental arithmetic; circular reactions (ref. Piaget); zone of proximal development (ref. Vygotsky); organising and structuring learning tasks; group and individual acitivity; drill; memorization and algorithmization.

Unit III

Mathematics in the context of schools : text-books, curricula and class-room practices; nature of mathematics - conceptual and procedural; areas (space, measurement, operations etc.); research on children's learning in specific areas; errors; feedback; testing and evaluation; the hidden curriculum; mathematics phobia and failure.

Unit IV

Content specific pedagogy:language of mathematics, number, place value, fractions, decimals, role ofreadymade kits.

Suggested Readings

- Begle, E. (Ed.). (1970). Mathematics Education, 69th Year book of NSSE, Chicago University Press: Chicago.
- Clements, D. H. and M. T. Battista (1992). Geometry and Spatial Reasoning, ill P.A. Grouws (Ed), Handbook of Research on Mathematics Teaching and Learning, Reston: V.A.
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- National Council of Teachers of Mathematics (NCTM)(1989). Assessment Standards for School Mathematics, NCTM, Reston: V.A.
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SEED218A	ARTS IN EDUCATION	2

Course Overview

Arts Education as one of the domains of knowledge is taught as a compulsory curricular area up to class X. There is a need to integrate arts education in the formal schooling of students to retain our unique cultural identity in all its diversity and richness and encourage young and creative minds. The NCF-2005 recommends Arts Education as a subject as well as a pedagogical tool to make teaching and learning of other subjects more meaningful. The course on Arts in Education has been designed keeping in view the development of the self through arts for every student teacher and for the development of student in school through arts in education to be practiced by every teacher.

In the Bachelor of Education programme, students will be exposed to different art forms where they will develop basic skills of the art forms through hands on experience and integration of arts as pedagogy in different subject areas. They will also use these skills in practice teaching during school internship. Arts education also helps in enhancing analytical and critical thinking among students and learning through the arts and its related skills will help the student-teachers in developing their communication and inter-personal skills as well as presentational skills by bringing these in their teaching practice. For this, not only Art teachers but every teacher in the school system needs to be sensitized to understand and experience the Arts, for holistic development of the learner, as a teacher as well as anindividual.

Objectives

The course will enable the student-teachers to-

- Understand basics of different artforms.
- Develop artistic and aesthetic sensibility among learners to enable them to respond to the beauty in different art forms, through genuine exploration, experience and free expression.
- Acquire skills for integrating different art forms across school curriculum for better learning anddevelopment.
- Develop awareness of the rich cultural heritage of thecountry.

Unit I: AppreciationofArts

- Identification of different performing styles and its artists; dance, music, theatre, puppetry, etc. (based on a set of slides, selected for the purpose).
- Understanding Craft Traditions of India and its relevance in education (based on a set

of slides, selected for the purpose); traditional crafts as a pedagogy assimilating all sciences and social sciences.

- Knowledge of Indian Art – from earliest to the contemporary; Visual Arts (based on a set of slides, selected for the purpose), looking at paintings, sculptures, architecture/ monuments as sources and indicators to know the historical, political, social, scientific and technological development perspectives during differentperiods.
- Indian festivals and fairs, the traditions and their significance, the spirit of celebrations as a socialphenomenon.

Unit II: Practicum

Visual ArtsandCrafts

- Hands on experience of working in different media and materials (drawing, painting, clay modeling, collage making etc. with pencil, pen, crayons, dry and watercolours, clay, paper, etc.), methods and techniques (block printing, collage making, clay modeling, relief work, heritage crafts etc.) to learn visual art processes and its pedagogical aspects related to other subjectareas.
- Exploring arts in education as a pedagogy across school curriculum and identifying themes and concepts for integrated learning forarts.
- Preparation and presentation techniques for effective classroom learning by developing aids and making the school environment aesthetically viable using artifacts anddisplays.

Performing Arts: Dance, Music, Theatreand Puppetry

- Listening/viewing and exploring regional music, dance, theatre and puppetry will help student-teachers in contextualizing different art forms and relating them with various concepts across thecurriculum.
- Drama in education; learning is enhanced through drama in education; it enhances communication skills and develop personality and self. Adaptation of different texts and concepts or themes from the curricular areas to be practiced by student-teachers.
- Planning a stage-setting for a performance, presentation and participation by the student-teachers in any one of the regional performing art forms keeping integrated approach of all art forms with other subjects isrecommended.

SEED220A	YOGA EDUCATION	2

Course Overview

Yoga Education has become as an essential component in all teacher education curriculum. Yoga has its roots in ancient Indian culture and civilization aiming at a fuller development of human personality, impacting upon its different dimensions and facets – the individual and social, emotional, cognitive, psychomotor, behavioural, and eventually moral and spiritual. Yoga, if regularly and properly practised, can transform an individual into a vibrant personality, full of energy and enthusiasm. It can be a source of peace, poise and tranquility. It can also build resistance against diseases, improve holistic holistic health, and can also help us to sharpen our memories, thus resulting in better concentration and a creative mind. It is for this reason that the teachers and teacher educators need to be initiated into the field of Yoga, which is recognized, accepted and practiced the entire world over as a way of life. Second, it is a truism that for spreading the messages of Yoga and making it a mass movement, no other agency except that of teachers can be most effective; therefore, inclusion of Yoga education in teacher education cannot be over emphasized.

So, in view of the educational significance of Yoga education, it is incorporated in teacher education curriculum. The curriculum lays emphasis on practical aspects of the Yoga i.e. Asanas, Pranayamas, Bandhas and Mudras. It also includes time spent on performing other cognitive or practical activities as mentioned the text.

Objectives

The course will enable the student-teachers to -

- Record a brief history and development of Yoga through the ages.
- Discuss how Yoga and Yoga practices are important for healthy living.
- Explain some important principles of Yoga.
- State the different types of Yoga.
- Explain the different limbs of Aṣṭāṅga Yoga of Patanjali & Haṭha Yoga.
- Establish a relationship between Haṭha Yoga and Aṣṭāṅga Yoga of Patañjali.
- Explain the benefits of ṣaṭkarma in developing a humane psycho-physical body.
- Demonstrate some important āsanas, and prāṇāyāma.

Unit I

- Yoga: meaning and initiation
    - Definitions of Yoga
    - Misconceptions about Yoga
    - Basis of Yoga
- Origin and history of development of Yoga
    - Psychological aspects leading to origin of Yoga
    - Yoga in medieval times
    - Yoga in modern times
- The two schools of Yoga: Raja Yoga and Hatha Yoga ,Yogic practices for healthy living.

Unit II

- Historicity of Yoga as a discipline
- Classification of Yoga and Yogic texts
    a) Yogasūtra of Patañjali
    b) Haṭha Yoga texts
- Understanding Aṣṭāṅga Yoga of Patañjali
- Haṭha Yogic practices
    - Āsanas
    - Pranayama, eight kumbhakas
    - Dhāraṇā on five elements
    - Mudras and bandhas
    - Ṣaṭkarma, the set of six cleansing techniques
- Relationship between Pātañjala Yoga and Haṭha Yoga
- Meditational processes in Pātañjala Yoga Sūtra

Unit III

- Need of Yoga for positive health
- Role of mind in positive health as per ancient Yogic literature
- Concept of health, healing and disease: Yogic perspectives
    - Concept of health and diseases
    - Concepts of triguṇa and pañcakoṣa vis-à-vis holistic health

- Potential causes of ill health
- Yogic principles of healthy living (āhāra, vihāra, ācāra, vicāra)
- Integrated approach of Yoga for management of health
- Stress management through Yoga and Yogic dietary considerations
- How stress is alleviated through Yoga?
- Prāṇa-saṁyamana (canalization of energy dynamics) through dietary considerations
- Rationale of Yogic diet.

Unit IV:Practicum

- General guidelines for performance of the practice of Yoga for the beginners
    - Guidelines for the practice of ṣaṭ kriyās
    - Guidelines for the practice of āsanas
    - Guidelines for the practice of prāṇāyāma
    - Guidelines for the practice of kriyā Yoga
    - Guidelines for the practice of meditation

- Select Yoga practices for persons of average health for practical Yoga sessions
    - Standing position
    - Sitting position
    - Prone position
    - Supine position
    - Kriyās
    - Mudrās
    - Prāṇāyāmas

Suggested Readings

- Anantharaman, T. R. (1996). Ancient Yoga and Modern Science. New Delhi: Munshiram Manoharlal Publishers Pvt Ltd.
- Bhavanani, A. D. (2008). A Primer of Yoga Theory. Pondicherry: Dhivyananda Creations, Iyyangar Nagar.
- Bhogal, R. S. (2010). Yoga & Mental Health & Beyond. Lonavla: Kaivalyadhama

SMYM Samiti,

- Bhogal, R. S. (2011). Yoga & Modern Psychology. Lonavla: Kaivalyadhama SMYM Samiti.
- Bucher, Charles A. (1975). Foundation of Physical Education. St. Louis: The C.V. Mosby Co.
- Devi, I. (1987). Yoga: The Technique of Health and Happiness. Bombay: Jaico Publishing House.
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- Digambarji, Swamī & Kokaje, R. S. (1971). Haṭhapradīpikā. Lonavala: Kaivalyadhama SMYM Samiti.
- Goel, A. (2007). Yoga Education, Philosophy and Practice. New Delhi: Deep and Deep Publications. http//www.wikipaedia.com
- Karambelkar, P. V. (1984). Pātañjala Yoga Sūtra. Lonavala: Kaivalyadhama SMYM Samiti.
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- Kuvalayānanda, Swamī (1933). Āanas. Lonavala: Kaivalyadhama SMYM Samiti. Kuvalayananda, S. & Vinekar, S. L. (1963). Yogic Therapy: Its Basic Principles and Methods. New Delhi: Ministry of Health and Family Welfare.
- Nath, S. P. (2005). Speaking of Yoga. New Delhi: Sterling Publishers.
- Swami Satyānanda (1999). Four Chapters on Freedom. Commentary on Yoga Sūtras of Patañjali Saraswathi. Munger: Bihar School of Yoga.
- Yadav, Y. P. and Yadav, R. (1998). Art of Yoga. Friends Publications, India.

SEED222A	UNDERSTANDING THE SELF	2

Course Overview

What is self? Is self the experience of internal talk? What characterizes ―self-lessness? Can identities change? Will the identity of a first generational learner belonging to a family of migrant labourer change when she is identified as a gifted child? What are the influences of parents and peers on the identity of a learner?

The above questions and many more similar questions trigger the exploration and need to understand the self‘. This course provides opportunity to the student-teachers to gain an understanding about their own self both as an individual and as a student-teacher.

Developing an understanding of the self is essential for an individual to utilise her/his optimal potential for the benefit of one‘s own self as well for the society. As individuals in the society student-teachers are integral part of it. As an integral member of the society an individual has various identities – gender, relational, linguistic, cultural etc. and it is essential to understand and address one‘s implicit beliefs, stereotypes and prejudices resulting from these identities. The student-teachers need to become aware of their own selves and their identities as well as the political, historical, and socio-cultural forces that shape them. The course thus provides an interdisciplinary view in the development of the understanding of one‘s own self. This exploration and understanding will enable the student-teachers to develop sensibilities, dispositions, and skills that will help in their personal and professional development and facilitate the personal growth of theirstudents.

Objectives

The course will enable the student-teachers to -

- Gain an understanding of the central concepts in defining self and identity.
- Reflect critically on factors that shape the understanding of self.
- Build an understanding about themselves, i.e. the development of self as a person as well as a teacher.
- Reflect on one‘s experiences, aspirations and efforts towards becoming a humane individual and teacher.
- Develop effective communication skills including the ability to listen, observe etc.
- Build resilience within themselves to deal with conflicts at different levels and learn to draw upon collective strengths to live in harmony with one‘s surroundings.
- Appreciate the critical role of teachers in promoting self and students’ well-being.

Unit I: Understanding of Self

- Reflections and critical analysis of one's own self andidentity
- Identifying factors in the development of self and in shapingidentity
- BuildinganunderstandingaboutphilosophicalandculturalperspectivesofSelf and
- Developing an understanding of one's own philosophical and cultural perspectives as ateacher

Unit II: Development of Professional Self and Ethics

- Understanding and sharing one's identity and socio-cultural, historical and political influences in shaping the professionalidentity
- Exploring, reflecting and sharing one's own aspirations, dreams, concerns and struggles in becoming ateacher
- Reflections on experiences, efforts, aspirations, dreams etc. ofpeers
- Building an understanding about values and professional ethics as a teacher to live in harmony with one's self andsurroundings
- Understanding the role of teacher as facilitator and partner in well-being among learners

Unit III: Role of Teacher in Developing Understanding of Self among Learners

- Reflecting on one's own childhood and adolescent years ofgrowing-up
- Facilitating development of awareness about identity amonglearners
- Developing skills of effective listening, accepting, positive regard etc. as a facilitator

Unit IV: Practicum (Any Two)

- Developing self-awareness as a teacher (individual/groupactivity)
- Exploring the known and unknown self in relation to what one and others know about one self and what others do not know (individualactivity)
- Reflecting , recording and sharing of critical moments in one's life (individual activity andpresentations)
- Reflections on critical moments in the lives of peers (small groupactivity)

- Exploring one's strengths, weaknesses, opportunities and threats (SWOTanalysis)
- Reflecting on likes, hopes, fears and pleasures through sentence completion exercises (individualactivity)
- Group activities involving communityparticipation
- Practising selected *asanas, pranayam, meditation and yogic kriyas* as prescribed in class VI to X syllabus of Health and Physical Education, NCERT.

Mode of Transaction

- The course will be transacted in workshop mode through individual and group experiential activities such as
- Personal narratives and storytelling, life stories, group interactions, film reviews to help explore one's self and identity. Student-teachers to engage in varied forms of self-expression such as poetry, painting and creative movements, humour, aesthetic representations,etc.
- Sharing of case studies by student-teachers, critical analysis of biographies and presentations, group readings and sessions on stories of different children who are raised in different circumstances and how this affects self and their personal and social identityformation.
- Reflective discussions on films/documentaries where the protagonist undergoes trials and finally discovers her/hispotential Development of reflective journals/diaries by the student-teachers.
- Introduction of Yoga, meditation as one of the important component to enhance student-teachers understanding of body andmind.

Suggested Readings

- Bhatt, H. The diary of a school teacher. An Azim Premji University Publication. Retrieved from www.arvindguptatoys.com/arvindgupta/diary-school-teacher- eng.pdf
- Bhattacharjee, D. K. (Ed). (2010). Psychology and Education – Indian Perspectives, NCERT, NewDelhi.
- Dalal, A. S. (Ed.) (2001). A Greater Psychology – An Introduction to the Psychological thoughts of Sri Aurobindo. Puducherry, Sri AurobindoAshram.
- Delors, J. (1996). Learning the Treasure within –Twenty First Century Education. UNESCO Education CommissionReport.

- Goel, D.R. (2005). Quality Concerns in Education. Centre for advanced study in Education-M. S. University ofBaroda.
- Gulati,S.,andPant,D.(2012).EducationforValuesinSchools–AFramework. NCERT, New Delhi.
- Krishnamurti, J. (1998). On Self- knowledge. Chennai, Krishnamurti Foundation India.
- Krishnamurti, J. (2000). Education and Significance of Life. Chennai, Krishnamurti Foundation India.
- Mukunda, K. V. (2009). What did you ask at school today? A handbook of child learning, HarperCollins
- Olson, D. R, and Bruner, J. S. (1996). Folk Psychology and folk pedagogy. In D.R. Olson & N. Torrence (Eds.), The Handbook of Education and Human Development (pp.9-27), Blackwell
- Pant, D. and Gulati, S. (2010). Ways To Peace – A Resource Book for Teachers. NCERT, New Delhi
- Venkateshamurthy, C. G., and Rao, A. V. G (2005). Life Skills Education Training Package. R.I.E.,Mysore.

SEED224A	SCHOOL ATTACHMENT PROGRAMME AND COMMUNITY LIVING	2

A. School Attachment Programme

Duration: 1 week

One week School Attachment Programme shall be carried out during the second semester in local/nearby school (s). The students will be allotted schools in the vicinity of the university. Care will be taken to identify various types of school for the programme, e.g. Government, Private, Urban, Rural, Special Schools.

During this programme, the student-teachers shall observe: (i) various curricular activities, e.g. sports and games, dance, songs; and (ii) the teaching-learning process in the classroom, ICT use, student participation, classroom management. The student-teachers shall observe curricular activities for which they may use observation schedules. The institute shall develop these schedules; and orient the student-teachers on the process of observation as well as use of the schedules. At the end of the programme, student-teachers shall be required to develop a detailed report and share the same in a seminar/meeting at the Institute.

B. Community Living

Duration: 1 week

Student-teachers shall be provided exposure to community life for at least one week during which they shall spend time with the community members and act in terms of preparing school development plan, sharing cultural practices, holding cultural programmes and gaining community‘s perception about and aspirations from formal education system.

At the end of this programme, the student-teachers shall prepare a detailed report of the programme, individually and/or in group.

*Liberal Course (Optional II)

SEED226A	ENGLISH II	4

Course Overview

This course contains a Course Overview of the role and function of English language in everyday life. It aims to equip the students on English competence required for reading, writing, listening and speaking. It endeavours to expand the learner's use of grammatically correct and situationally and culturally appropriate language in speaking and writing for effective communication in a variety of interpersonal and academic situations.

Objectives

The course will enable the student-teachers to –

- Develop English language skills in listening, speaking, reading and writing.
- Be well versed in the use of strategies, such as contextualization of new vocabulary, use of previewing, skimming and scanning techniques
- Develop the knowledge of text organization and discourse markers.
- Aid the comprehension of written and spoken language.
- Demonstrate an understanding of the pragmatic function of English language.

Unit I: Introduction to English Language

Role and significance of English language in the present scenario English Language; Its relevance for the Indian industry; Introduction to Listening, Speaking, Reading, Writing (LSRW) and benchmarking of the class

Unit II: Phonetics& Functional Grammar

Pronunciation and daily usage correction; Parts of speech, articles, tenses, verbs and modals; Practice of daily use words, numerals and tongue twisters; Vocabulary building, Construction of simple sentences: Basic sentence pattern, subject and Predicate

Unit III: Vocabulary: Building Blocks

Word Formation: Prefix, suffix, conversion and compounding; Homophones and one-word substitution; Words often confused and misused; Idiomatic phrase, Antonyms and Synonyms

Unit IV: English Language Teaching

Different Methods: GT Method, Direct Method, CLT Method; Approach , Method and Techniques, Classroom Strategies.

Suggested Readings

- ILFS Bi-lingual Course in Basic English, ILFS Skill Development Corporation.
- Nesfield, J. C. English Grammar Composition & Usage by, Macmillan Publishers.
- Richards, J. C., & Rodgers, T. S. (2001). Approaches and methods in language teaching. Cambridge: Cambridge University Press.

SEED228A	HINDI II	4

(मध्यकाल से आधुनिक कल तक)

खण्ड I: मध्यकालीन काव्य (भक्तिकाल व रीतिकाल)

- पूर्वमध्यकाल (भक्तिकाल) के निम्नलिखित कवियों की कुछ प्रतिनिधि रचनाएँ

कबीर (पद संख्या 1 से 10)

- जायसी "नागमती वियोगवर्णन" (पद संख्या 1 से 5)
- तुलसी रामचरित मानस - उत्तरकाण्ड (पद संख्या 1 से 10)
- सूरदास :भ्रमरगीत सार पद संख्या 21 से 80 तक
- मीरा दूखण लागै नैन (पद) सांचोप्रीतम (पद)

उत्तर मध्यकाल (रीतिकाल) के निम्नलिखित कवियों की कुछ प्रतिनिधि रचनाएँ

- बिहारी दोहा संख्या (1 से 10) (कवित्तकोष)

- घनानन्द : वहै मुस्क्यानि , वहै मृदु बतरानि , वहै (कविताकोश)

खंड II : आधुनिक काल (भारतेन्दु युग , द्विवेदी युग एवं छायावादी काव्य)

(क) पूर्व छायावादी काव्य

- **भारतेन्दु युग (नवजागरण काल)**
- भारतेन्दु :
    - ऊधो जो अनेक मन होते
    - परदे में कैद औरत की गुहार
    - मातृभाषा प्रेम पर दोहे
        - **द्विवेदी युग :**

(क) महावीर प्रसाद द्विवेदी : आर्य भूमि

(ख) अयोध्या सिंह उपाध्याय हरिऔध

- कर्मवीर
- आँख का आँसू

(ग) मैथलीशरण गुप्त

- उद्बोधन
- सखी वे मुझसे कहक जाते

खंड III: छायावादी काव्य (स्वच्छंदतावाद) की प्रमुख प्रवृत्तियाँ एवं निम्नलिखित कवियों की प्रतिनिधि रचनाएँ :

- जयशंकर प्रसाद
    - जग री
    - मेरे नाविक
- सुमित्रानंदन पंत
    - प्रथम रश्मि
    - द्रुत झरो
- सूर्यकांत त्रिपाठी 'निराला'
    - तोड़ती पत्थर
    - बदल राग
    - कुकुरमुत्ता
- महादेवी वर्मा
    - कौन तुम मेरे ह्रदय में
- मै अनंत पथ में लिखती जो

- क्या पूजा, क्या अर्चन करूँ
- हरिवंशराय बच्चन (व्यक्ति चेतना प्रधान कवि)
- बालकृष्ण शर्मा 'नवीन':(राष्ट्रीय चेतना प्रधान कवि)
  - विप्लव गायन
- रामधारी सिंह 'दिनकर' : (राष्ट्रीय चेतना प्रधान कवि)

खंड IV प्रगतिवादी एवं प्रयोगवादी काव्य परंपरा एवं प्रतिनिधि रचनाएँ

- केदारनाथ अग्रवाल
  - कनबहरे
  - जो जीवन की धुल चाट कर बड़ा हुआ
  - नागार्जुन
  - तीनो बन्दर बापू के
  - बदल को घिरते देखा
- अज्ञेय
  - कलगी बाजरे की
  - सर्जना के क्षण
- गजानन माधव ‘मुक्तिबोध’
  - ब्रह्मराक्षस
  - मुझे कदम कदम पर

SEED230A	**Chinese II**	**4**

Course Overview

This course aims to provide students with a comprehensive understanding of Chinese language and culture, focusing on script, character recognition, writing, and textual comprehension. By delving into the intricacies of Chinese script and language structure, students will gain insights into Chinese society, values, and perspectives.

Objectives

The course will enable the students to:

1. Understand society and background of China through the language
2. Develop an analytical outlook towards understanding a country and its people through language.

Unit I: Learning Chinese Strokes and it's order

Knowledge of script system of a foreign language

Ability to reproduce the correct strokes of Chinese script in proper order

Gendered nuances of Chinese radicals

Unit II: Recognizing and Comprehension of Chinese Characters

Recognition and identification of a foreign script-Chinese

Recognize and comprehend the meaning of Chinese Characters

Unit III: Writing correct sentences in Chinese Characters

Knowledge of script system of a foreign language

Art field (if calligraphic handwriting is developed)

Recreate Chinese script and write meaningful sentences.

Unit IV: Comprehend text written solely in Characters.

Recognition and identification of a foreign script-Chinese

Form grammatically correct Chinese sentences and produce content in Chinese language.

Awareness of Gender roles through Chinese characters

Knowledge of moral value system of a foreign community through language

Suggested Readings

- "Remembering the Hanzi: Book 1, How Not to Forget the Meaning and Writing of Chinese Characters" by James W. Heisig
- "Chinese Characters: A Genealogy and Dictionary" by Rick Harbaugh
- "Chinese Calligraphy Made Easy: A Structured Course in Creating Beautiful Brush Lettering" by Rebecca Yue
- "Remembering the Hanzi: Book 1, How Not to Forget the Meaning and Writing of Chinese Characters" by James W. Heisig
- "Chinese Characters: A Genealogy and Dictionary" by Rick Harbaugh
- "Chinese Calligraphy Made Easy: A Structured Course in Creating Beautiful Brush Lettering" by Rebecca Yue

SEED232A	MATHEMATICS II	4

Course Overview

In this course, the learner will learn how to link pairs of objects from two sets and then introduce relations between the two objects in the pair. Further, they will learn about special relations which will qualify to be functions. The concept of function is very important in mathematics since it captures the idea of a mathematically precise correspondence between two quantities. Students would be able to generalise the concept of trigonometric ratios to trigonometric functions and study their properties. When we say a collection of objects is listed in a sequence, we usually mean that the collection is ordered in such a way that it has an identified first member, second member and third member, and so on. Students shall learn important applications of sequences in several spheres of human activities. Students shall also learn elementary concepts of continuity, differentiability and relations between them.

Objectives

The course will enable the student-teachers to -

- Expand on the knowledge of relations, and functions between two objects in the pair.
- Understand trigonometric functions and study their properties.
- Apply the knowledge of sequences in several spheres of human activities.
- Gain mastery over elementary concepts of continuity and differentiability.

Unit I: Relations and Functions

- Types of Relations
- Types of Functions
- Composition of Functions and Invertible Function
- Binary Operations

Unit II: Trigonometric Functions

- Angles
- Trigonometric Functions
- Trigonometric Functions of Sum and Difference of Two Angles
- Trigonometric Equations

Unit III: Sequence and Series

- Introduction of Sequence and Series
- Arithmetic Progression (A.P.)
- Geometric Progression (G.P.)
- Relationship between A.M. and G.M.
- Sum to *n* terms of Special Series

Unit IV: Limits and Derivatives

- Intuitive Idea of Derivatives
- Limits
- Limits of Trigonometric Functions
- Derivatives

Practicum

1. To verify that the given sequence is an arithmetic progression by paper cutting and pasting method.
2. To verify that the sum of first n natural numbers is $n(n + 1) / 2$, that is $\Sigma n = n (n + 1) / 2$, by graphical method.
3. To make a clinometer and use it to measure the height of an object.
4. To make mathematical designs and patterns using arithmetic progression.
5. To verify that for two sets A and B, $n (A \times B) = pq$ and the total number of relations from A to B is 2^{pq}, where $n(A) = p$ and $n(B) = q$.
6. To identify and distinguish a relation and a function.
7. To verify the relation between the degree measure and the radian measure of an angle.
8. To find the values of sine and cosine functions in second, third and fourth quadrants using their given values in first quadrant.
9. To prepare a model to illustrate the values of sine function and cosine function for different angles which are multiples of π and $\pi /2$.
10. To plot the graphs of sin x, sin 2x, 2sinx and sin x/2 , using same coordinate axes.
11. To examine how a function behaves as the input approaches a particular value and estimate limits from graphs.

Suggested Readings

- Acheson, David(2017). The Calculus Story: A Mathematical Adventure, OUP Oxford.
- Arora, S. C. and Kumar, Ramesh. A Textbook of Calculus, Pitamber Publishing Co.: Delhi
- Fernandez, Oscar(2014). Everyday Calculus – Discovering the Hidden Math All around Us, Princeton University Press.
- Loney, S. N. (2016). Plane Trigonometry, MTG Learning Media Private Limited.
- NCERT, Exemplar Problems for Class XI – XII.
- NCERT, Mathematics, Textbook for Class XI – XII.
- Sharma, R. D. Mathematics for Class 11, Dhanpat Rai Pubications; Latest Edition.

SEED234A	PHYSICS II	4

Course Overview

Physics is an advanced level science class that satisfies the high school graduation requirement of a physical science class. This Physics II curriculum includes Quantum Mechanics, Statistical Physics, Special Theory of Relativity and Nuclear Physics. Students will be challenged to apply their knowledge of the laws of physics to solve physics related critical thinking problems.

Objectives

The course will enable the student-teachers to -

- Understand the fundamental quantum mechanics which forms the basis of theoretical physics.
- Gain knowledge about probability of occurrence of events.
- Learn about the application of fundamentals of relativity to various phenomena.
- Understand nuclear structure, properties and basic nuclear phenomenon.

Unit I: Quantum Mechanics

De-Broglie Hypothesis, Group and Phase Velocity, Wave Packet, Uncertainty Principle, Wave Function and Its Properties, Davisson Germer experiment, Time Dependent and Independent Schrodinger Equation,Particle in a box (1-D).

Unit II: Statistical Physics

Probability, Macrostate and microstate, Qualitative Features of Maxwell Boltzmann, Bose-Einstein and Fermi-Dirac statistics distribution, functions & their comparison (no derivation).

Unit III: Special Theory of Relativity

Inertial and non-inertial frames of references, Michelson- Morley experiment, postulates of special theory of relativity, Lorentz transformation, length contraction, time dilation, addition of velocities, mass energy equivalence.

Unit IV: Nuclear Physics

The Atomic Nucleus, Nuclear force, Static properties of nucleus-mass, radius, density charge, quantum states, spin and magnetic moments; Nuclear stability, binding energy , Nuclear models- liquid drop model and shell mode. Radioactivity, Half-life, Alfa, beta and gamma decay, nuclear fission and fusion, Nuclear reactors.

Suggested Readings

- Avadhanulu, M. N. and Kshirsagar, P. G. A Textbook of Engineering Physics, S. Chand.
- Beiser, A. Concept of Modern Physics.
- Patharia, R. K. Statistical Mechanics, Oxford: Butterworth.

SEED236A	CHEMISTRY II	4

Course Overview

This course deals with the Chemistry of aliphatic and Aromatic hydrocarbons their nomenclature, naming reactions and mechanism, theory of Chemical Bonding, Chemical kinetics and surface chemistry. Proposed course provides the detail knowledge about types of organic chemistry and their chemical mechanism with Alkane, alkene, alkynes and Aromatic hydrocarbons. Students also learn the position and arrangement of elements.This course helps the students to understand Chemical kinetics for determination of rate of chemical reaction.

Objectives

The course will enable the student-teachers to -

- Gain the knowledge of Alkane, alkene and alkynes and their reaction on the basis of which their stability could be determined.
- Expalin synthesis of alcohols, ketones, acids on the basis of naming reactions.
- Understand the general properties of all elements present in periodic table.
- Differentiate the types of order of reaction on the basis of which rate of reaction could be determined.

Unit I: Chemistry of Aliphatic Hydrocarbons

Carbon Carbon sigma bonds: Formation of alkanes, Wurtz Reaction, Wurtz- Fittig Reactions, Free radical substitutions: halogenation - relative reactivity and selectivity.

Carbon-Carbon pi bonds Formation of alkenes and alkynes by elimination reactions, Mechanism of E1, E2, reactions. Saytzeff eliminations, reactions of alkenes: electrophilic additions, their mechanisms (Markownikoff/ Anti Markownikoff addition), mechanism of oxymercuration-demercuration, hydroboration- oxidation, ozonolysis, reduction (catalytic and chemical), syn and anti hydroxylation (oxidation).

Unit II:Aromatic Hydrocarbons

Aromaticity: Huckel's rule, aromatic character of arenes, cyclic carbocations/carbanions and heterocyclic compounds with suitable examples, electrophilic aromatic substitution:

halogenation, nitration, sulphonation and Friedel-Craft's alkylation/acylation with their mechanism, directing effects of the groups.

Unit III: Chemical Bonding

Valence Bond Theory, Molecular orbital Theory, Construction of Mo. Diagrams for homo nuclear & heleronulear diatomic , Types of bond (Ionic covalent, Coordinate, metallic, Concept of Hybridization, Definition Types, Prediction of Hybridization ($BeCl_2$, CH_4, ClF_4, $POCl_3$, $NH4^+$, $H_3O^+CO_3^{-2}$, Cl^{4-})

Classification of elements based on their electronics structure : The long form of periodic table s, p, d, f block elements, their position in periodic table and general properties related to their electronic structures: atomic, ionic and covalent radii, ionization energy, electron affinity, screening effect, electronegativity, metallic and non – metallic character.

Unit IV: Chemical Kinetics and Surface Chemistry

Definition of order and molecularity, derivation of rate constant for zero, first, second and third order reactions and example, effect of temperature, concentration, catalyst & pressure on rate of reaction, Arhenius equation, pseudo order reaction, simple collision theory & transition state theory for reaction rate, definition of colloids, preparation, purification & properties of colloidal solution (Solutions), Hardy – Schulze law, preparation, properties & uses of emulsion of gel, protective colloids.

Practicum

1. Detection of extra elements (N, S, Cl, Br, I) in organic compound not more than two such elements may be present in a compound.
2. Determination of total, permanent and temporary hardness of given water sample.
3. Preparation of potash alum/ chrome alum.
4. Determination of viscosity of liquid.
5. Determination of CST for water – phenol system.

Suggested Readings

- Bahl, A. and Bahl, B. S. Advanced Organic Chemistry, S. Chand and Co. Ltd., New Delhi.

- Bahl, Arun. Essentials of Physical Chemistry, S. Chand Publishing.
- Bahl, R. S. and Bahl, A. (1990). Advanced Organic Chemistry, S. Chand and Co.: New Delhi,
- Donald, H. Andrews (1970. Introductory Physical Chemistry, McGraw Hill: New York.
- Finar, I. L. Organic Chemistry (Volume 1), Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
- Giri, O. P. et. al., Practical chemistry, S. Chand and company Pvt. Ltd., New Delhi.
- James, E. et. al. (1993). Inorganic Chemistry, Harper Collins: London.
- Khosla, B. D. etl al.(1982).A senior practical physical chemistry, R. Chand and CO.: New Delhi
- Puri, B. R. Sharma, L. R. and Pathania, M. S., Principles of Physical Chemistry, Vishal Publishing Company.
- Puri, B. R., Sharma, L. R. and Kalia, K. C. Principles of Inorganic Chemistry, Shobhan Lal Nagin Chand & Co., New Delhi.

SEED238A	BIOLOGY II	4

Course Overview

Studying biology is the foundation of all characteristics of life on Earth. Apart from creating solutions to the challenges many living organisms face, it paves the way for inventions and discoveries that improve the quality of life. Biology plays an important role in the understanding of complex forms of life involving humans, animals and plants. Understanding these intricate details of life helps humans understand how to care for themselves, animals and plants in the proper manner. Biology helps individuals understand the interaction between humanity and the world. It also develops interests in the lives of living organisms in an effort to preserve them.

Objectives

The course will enable the student-teachers to -

- Understand the structural organisation in animals and plants.
- Have knowledge about structure and function of animal cell and plant cell.
- Gain the knowledge about Plant Physiology.

- Familiarise the students with the mechanics of Photosynthesis and transportation of nutrients in an animal cell.

Unit I: Diversity of Life

Structural Organisation in Animals and Plants: Morphology and modifications; Tissues; Anatomy and functions of different parts of flowering plants: Root, stem, leaf, inflorescence-cymose and racemose, flower, fruit and seed (To be dealt along with the relevant practical of the Practical Syllabus).

Animal Tissues; Morphology, anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of an insect (cockroach). (Brief account only)

Unit II: Cell Structure and Function

Cell theory and cell as the basic unit of life; Structure of prokaryotic and eukaryotic cell; Plant cell and animal cell; Cell envelope, cell membrane, cell wall; Cell organelles– structure and function; Endomembrane system- endoplasmic reticulum, Golgi bodies, lysosomes, vacuoles; mitochondria, ribosomes, plastids, microbodies; Cytoskeleton, cilia, flagella, centrioles (ultra structure and function); Nucleus–nuclear membrane, chromatin, nucleolus.

Chemical constituents of living cells: Biomolecules–structure and function of proteins, carbodydrates, lipid, nucleic acids; Enzymes–types, properties, enzyme action.

Cell Division: Cell cycle, mitosis, meiosis and their significance.

Unit III: Plant Physiology

Transport in Plants: Movement of water, gases and nutrients; Cell to cell transport– Diffusion, facilitated diffusion, active transport; Plant – water relations– Imbibition, water potential, osmosis, plasmolysis; Long distance transport of water– Absorption, apoplast, symplast, transpiration pull, root pressure and guttation; Transpiration– Opening and closing of stomata; Uptake and translocation of mineral nutrients– Transport of food, phloem transport, Mass flow hypothesis; Diffusion of gases (brief mention).

Mineral Nutrition: Essential minerals, macro and micronutrients and their role; Deficiency symptoms; Mineral toxicity; Elementary idea of Hydroponics as a method to study mineral nutrition; Nitrogen metabolism – Nitrogen cycle, biological nitrogen fixation.

Unit IV: Photosynthesis

Photosynthesis as a means of Autotrophic nutrition; Where does photosynthesis take place; How many pigments are involved in Photosynthesis (Elementary idea); Photochemical and biosynthetic phases of photosynthesis; Cyclic and non-cyclic photophosphorylation; Chemiosmotic hypothesis; Photorespiration; C3 and C4 pathways; Factors affecting photosynthesis. Respiration: Exchange of gases; Cellular respiration – glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); Energy relations – Number of ATP molecules generated; Amphibolic pathways; Respiratory quotient.

Plant Growth and Development: Seed germination; Phases of plant growth and plant growth rate; Conditions of growth; Differentiation, dedifferentiation and redifferentiation; Sequence of developmental process in a plant cell; Growth regulators–auxin, gibberellin, cytokinin, ethylene, ABA; Seed dormancy; Vernalisation; Photoperiodism.

Practicum

1. Preparation and study of T.S. of dicot and monocot roots and stems (primary).
2. Study of osmosis by potato osmometer.
3. Study of plasmolysis in epidermal peels (e.g. Rhoeo leaves)
4. Study of distribution of stomata in the upper and lower surface of leaves.
5. Comparative study of the rates of transpiration in the upper and lower surface of leaves.

Suggested Readings

Zoology

- Adhikari, S. and Sinha, A. K. (1990). Fundamentals of Biology of Animals, Vol.-3. New Central Book Agency: Calcutta. Alexander, R. McNeill. Animals, Cambridge University Piess: Cambridge.
- Audersirk, G. and Audersirk, T. (1992). Biology - Life on Earth, MacMillan: New

York.

- Cleveland, P. Hickman (1985). Integrated Principles of Zoology, The C.V. Mosby Co.: London 1970. Dhami and Dhami. Invertebrates, R. Chand & Co.: New Delhi.
- Easton, T. A. and Rischer, C. E. (1995). Bioscope, Charles E. Merill Pub. Co.: Ohio.
- M. A. and Wiggins, J. F. (1970). Animal Types (Invertebrates), Hutchinson Educational London.
- Raven, P. H. and Johnson, G. B. (1996). Biology, Brown Publishers, London, Robinson.

Botany

- Davis, B. D. (1980). Microbiology, Harper and Row: USA.
- De Witt, William. Biology of the Cell - An Evolutionary Approach, W.B. Saunders Co: London, Keeton.
- Pandey, S. N. and Trivedi, P. S. (1995). A Text Book of Botany, Vol. I & II, Vikas Publishing House: New Delhi.
- Pelezar, J. R. (1988). Microbiology, McGraw Hill: New York.
- Vashishta, B. R. (1990). Algae, S. Chand & Company: New Delhi.
- Vashishta, P. C. (1983). Gymnosperms, S. Chand & Company: New Delhi.
- Vashistha, B .R. (1995). Fungi, S. Chand & Company: New Delhi.
- W. T. and Gould, J. L. (1993). Biological Science, Norton W.W. USA.

SEED240A	HISTORY II	4

Course Overview

The course aims to make students aware about historical sources and the major empires that existed in the past. It will also look at different societal forms, the specificities of different systems and their transformations, the long term trends and processes in history.

Objectives

The course will enable the student-teachers to -

- Acquaint the students with different sources of Ancient Indian History.
- Understand the causes and consequences of Foreign Invasions
- Aware with the administration and statecraft of various empires.

Unit I: Historical Sources and Foreign Invasions

- Sources of Ancient Indian History
- Political condition of Northern Indian during 6th Cent. B.C.
- Persian and Alexander's invasion on India and Its effects

Unit II: Rise of Magadha and Mauryan Empire

- Rise of Magadha Empire
- Haryanka dynasty [Bimbisara, Ajatshatru and his successors]
- Saisunga dynasty [Saisunga, Kalasoka]
- Nanda dynasty [origin, Mahapadanaanda, successors and causes of downfall
- The Mauryas [Origin, Early life & conquets of Chandragupta Maurya, Bindusara, Sources for the history of Asoka, Conquests, Extent of Empire, Dhamma Policy, Successors & Causes of Downfall]
- Kalinga

Unit III: Gupta Period

- The Guptas [Chandragupta I, Samudragupta, Historicity of Ramagupta, Chandragupta II, Kamaragupta, Skandagupta, Successors and causes of Downfall]
- Brief history of the following- The Vatakas, The Maukharis, The Later Guptas, Huna Invasions of India

Unit IV: Rajput and Four Powerful Rajput States

- Origin of Rajputs
- The Chandellas
- The Paramaras
- The Ghahamanas
- The Gahadawalas

Suggested Readings

- Dahiya, Poonam Dalal (2017). Ancient and Medieval India, McGraw Hill, Delhi.
- Pandey, V. C. and Pandey, A. A New History of Ancient India.
- Raichaudri, H. C. Political History of Ancient India.
- Sharma, R. S. (2006). India's Ancient Past, Oxford Publication, New Delhi.

SEED242A	POLITICAL SCIENCE II	4

Course Overview

The course attempts to make students aware about the concept as well as growth of Nationalism, fundamental rights and directive principles of the state policy and the working of the government at various levels.

Objectives

The course will enable the student-teachers to -

- Understand India's political trajectory.
- Have an idea about the functioning of government at different levels under the provisions made in the constitution of India.

Unit I: Concept and Growth of Nationalism in India

The birth and growth of Nationalism in India, The Indian National Congress, the Moderates and the Extremists, Landmarks of Indian National Movement, Non-Cooperation, Civil Disobedience and Quit India Movement, The Independence Act 1947.

Unit II: Philosophical Premises and Making of the Indian Constitution

- The Nature & Composition of the Constituent Assembly
- Working of the Constituent Assembly
- Committees of the Constituent Assembly

- Enactment of the Constitution
- Fundamental Rights and Fundamental Duties
- Directive Principles of State Policy

Unit III: System of Government

- Parliamentary Form of Government
- Presidential Form of Government,
- Centre –state Relations,
- Federal System.

Unit IV: The Union Government and the State Government

- The President
- The Prime Minister
- The council of Ministers
- The Parliament
- The Supreme Court
- Chief Minister
- Governor.

Suggested Readings

- Aggarwal, R .C. and Bhatnagar, Mahesh (2005). Constitutional Development and National Movement in India, S. Chand.
- Chandra, Bipan (2009). History of Modern India, Orient Blackswan.
- Chandra, Bipan (2016). India's Struggle for Independence: 1857-1947, Penguin India.

SEED244A	GEOGRAPHY II	4

Course Overview

This course provides the students with the Physical Parameters of the Ocean; Ocean Basin Topography; Life in the Sea; and Resources in the Oceans. The course focuses upon life on the earth keeping into consideration climate, vegetation and soil. The geography of natural hazards a part of the course, examines human landscapes, in areas prone to damaging environmental conditions, i.e., floods, droughts, earth-quakes, severe agricultural frosts, etc. upon the identification of geographic areas where notable disasters have occurred.

Objectives

The course will enable the student-teachers to -

- Develop an understanding of physical parameters of the ocean.
- Know about the mechanism of current, tides and waves.
- Understand the interactive mechanism between human beings and the biosphere.
- Know about Indian climate, vegetation, distribution of wild life etc.
- Develop an understanding into causes, consequences and management of Environmental Hazards in India.

Unit I

Water (Ocean): Geomorphology of the ocean floor, submarine relief features of Atlantic, Pacific and Indian Ocean. Movement of ocean water: Currents, tides and waves. Marine deposits and coral reefs.

Unit II

Life on the Earth: Approaches in environmental Geography, landscape, ecosystem and perception approaches, Man and the Biosphere: Interactive and dynamic relationship. Human impact on biogeochemical cycles.

Unit III

Climate, Vegetation and Soil: Climate: factors controlling climate of India, Origin and mechanism of Indian monsoon; Seasons of India, Classification of climate of India (Koeppen's & Thornthwaite) Soils: Type and distribution (I.C.A.R.), Soil problems, conservation of soil. Vegetation- Types & Distribution; conservation Wild Life and its conservation.

Unit IV

Natural Hazards and disasters: Causes, Consequences and management in India Environmental Hazards: Floods, droughts, cyclones, earthquakes and landslides; human adjustment to hazards; hazards perception and mitigation; environmental institutions and legislation in India.

Suggested Readings

- Alexanderson, G. E. (1967). Geography of Manufacturing, Prentice Hall, New Jersey.
- Becht, J. E. and L. D. Belzung (1975). World Resource Management, Key to Civilization and Social Achievement, Prentice Hall, New York.
- Cartar, H. (1975). Study of Urban Geography, Arnold, London.
- Chandna, R. C. (1987). An Introduction to Population Geography, Kalyani Publishers, Delhi.
- Grigg, D. B. (1984). An Introduction to Agricultural Geography, Hutchinson, London.
- Gupta, S. L. (1992). Bhu-Akriti Vigyan, Directorate of Hindi Medium Implementation, Delhi.
- Hagget, P. (1979). Geography: A Modern Synthesis, Harper and Row, New York.
- Hart, Shorne R. (1959). Perspectives on the Nature of Geography, Rand McNally, Chicago.
- King, C. A. M. (1975). Introduction to Physical and Biological Geography, English Language Book Society, London.
- Monkhouse, F. J. and Wilkinson, H. R. (1971). Maps and Diagrams: Their Compilation and Construction, Metheun, London.

SEED246A	ECONOMICS II	4

Course Overview

Almost every day we hear news reports of economic problems and successes from around the world and the economic reforms adopted by nations at macro level to achieve the economic goals of growth and stability. Macroeconomics deals with the aggregate economy. This course discusses the preliminary concepts associated with the macro variables like determination and measurement of aggregate macroeconomic variable like savings, investment, GDP, money, inflation, unemployment and unequal distribution of income and wealth.

Objectives

The course will enable the student-teachers to -

- Understand the forces determining macroeconomic variables such as inflation, unemployment, interest rates, and the exchange rate.
- Understand and use basic economic principles in day to day economic activities.
- Predict the effect of changes in policy that are expected to impact the economy.

Unit I: Introduction

Meaning and Limitations of Macro Economics

- Integration with Micro Economics
- Macro Statics and Macro Dynamics

National Income: Concept, Component and Measurement of National Income

- Circular flow;
- Real versus nominal
- GDP
- Price indices

Unit II: Theory of Employment

- Say’s Law of Market
- Classical and neo classical Theory of Employment

- Aggregate Demand and Aggregate supply
- Market equilibrium.
- Keyne's Theory of Employment,
- Effective Demand
- Consumption Function

Unit III: Money

- Functions of money
- quantity theory of money
- determination of money supply and demand;
- RBI and commercial bank, tools of monetary policy credit creation;,
- The investment multiplier, Equilibrium between savings and investment.

Unit IV: Economic Policies

- Objectives of economic Policy.
- Instruments and objectives of Monetary and Fiscal Policy in developing economy,
- Interaction of Monetary Policy
- Fiscal Policy. Problem of inflation and unemployment.

Suggested Readings

- Ackley, G. (1978). Macroeconomics: Theory and Policy, Macmillan, New York.
- Ahuja, H. L. Macro Economics Theory and Policy, S. Chand & Company Ltd.
- Branson, W. A. (1989). Macroeconomics: Theory and Policy, 3rd Ed. Harper and Harper and Row, New York.
- Dwiwedi, D. N. Macro Economics. Tata McGraw Hill, New Delhi.
- Jhingan M. L. Macro-Economic Theory, Vrinda Publications (P) Ltd.
- Lipsey R. G. and K. A. Christal (1999). Principles of Economics 9th Ed., Oxford University Press.
- Mankiw N. Gregory (2007). Principles of Economics, Thomson, Indian Reprint.
- Shapiro, E. Macroeconomics Analysis, Harcourt Brace Jovanovich.
- Stiglitz, J. E. and Carl, E. Walsh (2002). Principles of Macroeconomics, W.W. Norton and Company, New York.

Scheme of Studies and Syllabi for B.Ed. Programme as per Choice Based Credit System (CBCS)

Semester V			
S.No.	**Course Code**	**Course Title**	**C**
1	SEED345A	Language Across the Curriculum	4
2	SEED347A	Total Quality Management in Education	4
3	SEED349A	Story Telling and Children's Literature	2
4	SEED351A	Academic Enrichment Activities	2
5	SEED353A	School Engagement I	2
*Liberal Course (Optional III)			
6	SEED355A	English III	4
	SEED357A	Hindi III	
	SEED359A	Chinese III	
	SEED361A	Mathematics III	
	SEED363A	Physics III	
	SEED365A	Chemistry III	
	SEED367A	Biology III	
	SEED369A	History III	
	SEED371A	Political Science III	
	SEED373A	Geography III	
	SEED375A	Economics III	
		Total	**18**

SEED345A	LANGUAGE ACROSSTHE CURRICULUM	4

Course Overview

The role of languages across the curriculum is being increasingly documented, it is important for all teachers to understand the importance of language acrossthe curriculum and develop approaches that will help share the responsibility for the development of learners and the development of languages. We need to understand that language education is not confined to the language classroom. A science, social science or mathematics class is necessarily a language class also. Learning the subject means learning the terminology, understanding the concepts, and being able to discuss and write about them critically. Language is the medium for comprehending ideas, for reflection and thinking, as well as for expression and communication. Enhancing one's faculty in the language of instruction is thus a vital need of student-teachers, irrespective of the subject areas that they are going to teach. In India, language and literacy are generally seen as the concern of only the language teachers. However, no matter what the subject, teaching cannot take place in a language-free environment. This course is visualized to develop understanding about the nature and importance of classroom discourses; developing reading for information. This will strengthen the ability to 'read', 'think', 'discuss and communicate' as well as 'write' in the language of content. All possible efforts will be made to *build networks across different subjects and language* in order to enhance levels of language proficiency. Therefore, student-teachers will need to be familiar with theoretical issues and pedagogical issues of this course. The students will develop competence in analysing current school practices and coming up with appropriatealternatives for language teaching and learning across school subjects.

Objectives

The course will enable the student-teachers to –

- Introduce the theory and practice of a language across the curriculum.
- Build a perspective in the teaching of various subjects using a common language at the school level.
- Guide the students to explore language in subject-specific contexts by relating it to the overall objectives of the curriculum.
- Provide the participants with hands on experience of classroom practices which can be replicated in their specific contexts.

Unit I: Language Background of Students

- Understanding multilingualism in the classroom
- Home language and school language
- Power dynamics of the 'standard' language as the school language vs. home language or 'dialects'; (Deficit theory (Eller, 1989); Discontinuity theory).

The focus is to create sensitivity to the language diversity that exists in the classrooms. Understanding the language background of students, as first or second language users of the language used in teaching thesubject.

Unit II: Nature of Classroom Discourse

- Classroom Discourse — oral language; discussion as a tool for learning; the nature of questioning in the classroom — types of questions and teacher's role.

The focus is to help students-teachers understand the nature of classroom discourse and develop strategies for using oral language in the classroom in a manner that promotes learning in the subject area.

Unit III: Informational Reading and Writing

- Reading in the content areas — social sciences, science, mathematics
- Nature of expository texts vs. narrative texts; transactional vs. reflexive texts;
- Schema theory
- Text structures
- Examining content area textbooks
- Reading strategies — note-making, summarizing
- Making reading-writing connections
- Process writing
- Analyzing students' writings to understand their conceptions
- Writing with a sense of purpose — writing to learn and understand.

The focus is to develop critical reading comprehension in the content areas informational reading and developing writing in specific content areas with familiarity of different registers.

Unit IV:Practicum (Any Two)

- Discussion on role and importance of dialect and standardlanguage.
- Interview some technical people and find out which language do this prefer to use? And why?
- As a student you must have felt that sometimes the language of instruction did not help in understanding of the text. Keeping that in view how will you facilitate your students to understand thecontent?
- Comprehending and analyzing thetexts.
- Narrating / describing a related account from one's lifeexperience.
- Writing — based on the text, e.g. summary of the text, extrapolation of story, converting a situation into a dialogue,etc.
- Choose a few words from different text of content areas and give examples how similar word / language used in different context for convey themeaning.
- Ask the students to describe a scientific/mathematical/environmental concept in their language and then in the language that they are learning inschool.
- Analysis of structure of the article, identifying sub-headings, key words, sequencing of ideas, use of concrete details, illustrations and / or statistical representations, etc. (guided working inpairs)
- Take different types of texts from content areas. Analyse the language and develop a thematic lessondesign.
- Use texts from content areas in the language classroom to develop reading comprehension and readingstrategies.

Suggested Readings

- Agnihotri, R. K. & Khanna, A. L. (Eds.) (1994). Second language acquisition. New Delhi:Sage Publications.
- Agnihotri, R.K. (1999). Bachchon ki bhashaa seekhne ki kshamata, Bhag 1 or 2. Shakshik Sandarbh. Bhopal: Eklavya.
- Agnihotri, R. K. (2007). Hindi: An essential grammar. London: Routledge.
- Agnihotri, R. K. (2007). Towards a pedagogical paradigm rooted in multiliguality. International Multilingual Research Journal, Vol.(2) 1-10.
- Agnihotri, R. K. and Vandhopadhyay, P.K. (ed.) (2000). Bhasha, bhubhashita or hindi: Ekanth samvaad, New Delhi: Shilalekh.

- NCERT (2005). National Curriculum Framework (NCF). New Delhi: NCERT.
- Reading Development Cell, NCERT (2008). Reading for meaning. New Delhi: NCERT.
- Yule, G. (2006). The study of language. Delhi: Cambridge University Press.

SEED347A	TOTAL QUALITY MANAGEMENT IN EDUCATION	4

Course Overview

Quality education is a great concern in many societies across the world. In a highly competitive education sector, the success of academic institutions depends on the quality of education. Quality management is a system that serves to control quality in the critical activities of an organization by bringing together resources, equipment, people and procedures. Total quality management is a philosophy, methodology and system of tools aimed to create and maintain mechanism of organization's continuous improvement. It uses techniques and principles such as quality function deployment, teaching methods, service quality management, quality audits and Six Sigma to control quality in every sphere of activity in an organization. It presents several TQM frameworks, concepts, and quality improvement tools necessary for implementing the quality culture that characterizes world class organizations.

Objectives

The course will enable the student-teachers to –

- Develop the understanding of the concept, objectives and importance of Total QualityManagement in Education.
- Acquaint the students with various parameters of assessing institutions.
- Develop the ability to use various tools for assessing the institutions.
- Develop an understanding of participatory management and team building process.
- Develop an understanding and ability of collecting information for decision making.

Unit I: Concept of Quality and Quality Management

Concept of quality and quality management, issues in quality management, concept of quality in education, western and Indian perspective in quality education,bases of quality in education.

Unit II: Total Quality Management

Concept, development and objectives of TQM in education, advantages and disadvantages of TQM in Education, principles of TQM, application of TQM in education, TQM in Indian school, Time management and quality management through teacher education

Unit III: Assessment of Institutions

Parameters of assessment, tools of assessment, SWOT analysis,qualitative vs. quantitative analysis, concept of institutional climate.

Unit IV: Participatory Management and Decision Making Process

Concept of participatory management, team building process, leadership in TQM institutions,decision making: meaning, process and techniques.

Suggested Readings

- Aggrawal,Y .P. (1991). School Education, New Delhi, Arya Book Depot.
- Kumar, P.S. Mohan (2002). Total Quality Management in Higher Education and Relevance of Accreditation, University News AIU, New Delhi.
- Lal, H.(1990).Total Quality Management: A practical approach, New Delhi: New Age International Publishers.
- Lessem, R. (1997).Handbook of Total Quality Learning: Building a learning Organization, New Delhi: Beacon Book.
- Mukhopadhay, M. (2001).Total Quality Management, New Delhi,NIEPA.
- NAAC (2019). Institutional Accreditation- Manual for Universities. NAAC Bangalore.
- Sharma, D.D. Total Quality Management, Principles, Practices and Cases, Sultan Chandand Sons.

SEED349A	STORY TELLING AND CHILDREN'S LITERATURE	2

Course Overview

Through this colloquia activity, students are trained to examine and develop criteria of evaluating children's literature, develop skills of building resources for children and hone their skills of story-telling.

Objectives

The course will enable the student-teachers to –

- Examine and develop criteria of evaluating a variety of children's literature including picture books, folk tales, activity books, fiction and non-fiction.
- Develop skills of story-telling· and the creative use of children's literature.
- Develop skills of building up a resource of stories and children's literature for use in classrooms.
- Learn to use stories as a medium to facilitate expression, imagination and creative use of language in 'children.

Workshops

A series of workshops could be organised, spread over the academic year, on specific themes suggested below :

Story-telling

A series of discussions with students to identify skills of story-telling, relevant and interesting stories that children enjoy at different age levels. Subsequently, students will tell stories amongst peer groups, with the facilitation of supervisors. Groups will then critically reflect on story presentations. Workshops shall be organised with the participation of professional story tellers in Hindi and English.

Bulletin Board

Students in groups of 5-6 will take charge of a bulletin board for a given period of time. The task will be to take up a thematic topic and put up materials related to selected stories, in order to learn formal ways of attracting children's attention. Groups can then share their experiences during whole class discussions.

Story Folder

Students will classify available stories into different categories. Each story card will have key information about the story that is thus classified. This will enable students to develop a portfolio of stories that would be appropriate for specific age levels and interests.

Time Frame

Story-telling and children's literature activities are expected to be organised once every week for two hours. Workshops shall be organised for a longer duration, as and when possible.

Supervisory Support

Students will work under the professional guidance of resource persons as well as the facilitation of faculty supervisors.

Assessment

Students will be internally assessed by their respective supervisors using the following bases and criteria:

Regularity	• Participation in Workshops and related sessions
Bulletin Board	• Selection of the theme and presentation of stories
Story Folder	• Collection
	• References
	• Classification and retrieval system
	• Developing an evaluation criteria for children's literature
Story Telling	• Selection of story as per theme, age etc.
	• Animation
	• Voices Pitches, Clarity
	• Involvement, Eye Contact, Gestures, Book Handling

SEED351A	ACADEMIC ENRICHMENT ACTIVITIES	2

Course Overview

This course is designed with a view to provide practical exposure in developing educational games, developing teaching aids and models with respect to different pedagogical subjects. The course aims at providing education beyond the four walls of classrooms.

Objectives

The course will enable the student-teachers to –

- Enhance critical thinking skills through self-exploration and class experiences.
- Give teacher trainees the confidence and skills to successfully transition to knowledge and assist them in their personal development of life skills.
- Teach classroom skills to prepare students for higher level of teaching.
- Foster positive relationships with peers, faculty, and staff.
- Gain leadership skills through classroom activities, discussions, and cultural experiences.
- Develop strategies and resources for students to balance school, work, and personal commitments.

Suggested Activities

Activity 1: Indoor educational games.

Activity 2: Self-check quizzes.

Activity 3: Preparation of creative teaching aids/models.

Activity 4: Developing various teaching skills.

Activity 5: Innovative pedagogies in education.

Activity 6: Recent policies practices in teacher education.

Activity 7: Encouraging them to participate in seminars, conferences and workshops.

Activity 8: Encouraging teacher trainees for publication of research papers in educational journal.

Activity 9: Preparing them for organizing seminars, conferences and workshops.

SEED353A	SCHOOL ENGAGEMENT I	2

Course Overview

The school is considered as a laboratory for student-teachers. This course provides an overall exposure to the students regarding the scholastic and co-scholastic activities carried out in the school. The students are engaged in planning, organizing and executing some of the activities in school campus.

Objectives

The course will enable the student-teachers to –

- Interact with elementary school children.
- Explore creative ways of organizing activities for children.
- Prepare and comment upon school profile.
- Reflect upon their experiences.

Suggested Activities

Activity 1: Morning Assembly Report

Activity 2: Observation on students' movements in schools and classroom sitting postures in the school - Report

Activity 3: Organising Indoor and Outdoor games – Report

Activity 4: Student interaction with friends and family - Report

Activity 5: Study of a student with special need - Report

Activity 6: Critical study of Mid-day-meal - Report

Activity 7: Overall observation and commentary about the School

*LIBERAL COURSE (OPTIONAL III)

SEED355A	ENGLISH III	4

Course Overview

This course is a genre-based introduction to prose in English. Presenting important English language literary texts, the course explores a range of novels and short stories so as to illuminate the different forms and techniques found within these principal generic categories. The course also provides a short introduction to diverse literary and scholarly approaches to the study of texts.

Objectives

The course will enable the student-teachers to –

- Be familiar with a selection of important works within English-language prose literature.
- Have knowledge of different types of English-language prose.
- Use the English-language terminology connected to literary prose.
- Have an abilityto read literary prose texts critically and independently.

Unit I

Types of Prose and prose styles: Autobiography, Biography, Memoire, Travelogue (Definition with examples and famous works)

Unit II

Kamala Das: My Story

Unit III

Essays: Periodical, Formal, Familiar, Poetic Prose, Prose of thought (Definition with examples and famous works)

Unit IV

Bacon: Of Revenge

Richard Steele: Recollections of Childhood

Suggested Readings

- Abrams, M. H.& Harpham, G. G. (1999). A Glossary of Literary Terms, Boston, Mass: Thomson Wadsworth.
- Bacon, Francis (1986). The Essays. London. Penguin Classics.
- Blaisdell, Bob (2005). Great English Essays: From Bacon to Chesterton, Dover Thrift Editions.
- Boulton, Marjorie (2006). Anatomy of the Novel. New Delhi, Kalyani Publishing.
- Das, Kamla (2009). My Story. Harper Collins.
- Forster, E. M. (1964). Aspects of the novel. Harmondsworth: Penguin Books.

SEED357A	HINDI III	4

खंड I : हिंदी कहानी

- उसने कहा था : चंद्र शेखर शर्मा 'गुलेरी'
- ईदगाह : प्रेमचन्द्र
- ताई : विश्वम्भरनाथ शर्मा कौशिक
- तीसरी कसम : फणीश्वरनाथ 'रेणु'
- पाजेब : जैनेन्द्र
- एक और जिंदगी : मोहन राकेश
- ब्रह्मराक्षस का शिष्य : मुक्तिबोध
- दूसरी दुनिया : निर्मल वर्मा
- गुलेल का खेल : भीष्म साहनी
- मकर संक्रांति : अशोक अग्रवाल
- हींगवाला : सुभद्रा कुमारी चौहान

खंड II : हिंदी उपन्यास

- गोदान : प्रेमचंद
- तमस : भीष्मसाहनी
- ऐ लड़की : कृष्णा सोबती
- शेखर एक जीवनी : अज्ञेय

खंड III : हिंदी नाटक एवं निबंध

- अंधेर नगरी : भारतेंदु हरिश्चन्द

- भोर का तारा (एकांकी) जगदीश चंद्र माथुर
- लक्ष्मी का स्वागत (एकांकी) उपेंद्र नाथ अश्क
- गेहू का गुलाब (निबंध): राम वृक्ष बेनीपुरी
- सदाचार का ताबीज (व्यंग निबंध) हरिशंकर परसाई

खंड IV : हिंदी गद्य की अन्य विधाएँ

- मेरी तिब्बत यात्रा (यात्रा वृतांत) राहुल सांकृत्यायन
- भाई जगन्नाथ (संस्मरण) श्री राम शर्मा
- घीसा (रेखाचित्र) महादेवी वर्मा
- क्या लिखूं ? पदुमलाल पुन्नालाल बक्श

SEED359A	CHINESE III	4

Course Overview

This course is designed to provide students with foundational skills in spoken and written Chinese, as well as the ability to comprehend spoken language. Through a structured curriculum, students will develop proficiency in basic spoken communication, character writing, sentence construction, listening comprehension, and cultural awareness.

Course Objectives

The course will enable the students to:
1. To introduce basic spoken Chinese about self, school, family and profession.
2. To write characters and simple sentences.
3. To listen and discriminate between the sounds and sentences.

Unit I: To introduce basic spoken Chinese about self, school, family and profession.

- Knowledge of self-expression through a foreign language
- Hospitality Industry
- Self-Introductory ability through foreign language
- Awareness of gender roles in other cultures
- Family values of other cultures
- Knowledge of self-expression through a foreign language

Unit II: To write grammatically correct simple sentences in Chinese

- Translation Assignments and projects
- Character writing skills and Chinese content producing ability
- Gender awareness through characters and script
- Translation Assignments and projects
- Character writing skills and Chinese content producing ability

Unit III: To listen and discriminate between the sounds and sentences.

- Knowledge of sound distinction between different family of foreign languages
- Interpretation Assignments

Unit IV: Produce Content in Chinese related to Chinese language and Culture

- Knowledge of the linguistic system of a foreign language and social and cultural background.
- Interpretation and Translation Assignments
- Ability to perceive China as a country through linguistic knowledge and produce content related to China in Chinese
- Gender awareness through Chinese texts
- Instillation of moral and value system through texts

Suggested Readings

- "Integrated Chinese: Level 1, Part 1 (Simplified Characters)" by Yuehua Liu, Tao-Chung Yao, Nyan-Ping Bi, Liangyan Ge, Yaohua Shi
- "Chinese for Beginners: Mastering Conversational Chinese" by Yi Ren
- "Reading and Writing Chinese: Third Edition, HSK All Levels" by William McNaughton and Li Ying
- "The Routledge Course in Chinese Media Literacy" by Xiaosu Zhang
- "Chinese Language and Culture: Level 1" by Hong Zhang

SEED361A	MATHEMATICS III	4

Course Overview

Matrices are one of the most powerful tools in mathematics. This mathematical tool is not only used in certain branches of sciences, but also in genetics, economics, sociology, modern psychology and industrial management. In this course, it will be interesting to become acquainted with matrix algebra, determinants and various properties such minors and cofactors. Students shall also learn elementary concepts of continuity, differentiability and relations between them. Moreover, the students shall study some basic concepts related to differential equation.

Objectives

The course will enable the student-teachers to –

- Use matrices as tool in different discipline.
- Understand determinants and its properties.
- Learn elementary concepts of continuity, differentiability.
- Learn applications of differential equations in different areas.

Unit I: Matrices

- Types of Matrices
- Operations on Matrices
- Symmetric and Skew Symmetric Matrices
- Elementary Operation (Transformation) of a Matrix
- Invertible Matrices

Unit II: Determinants

- Properties of Determinants
- Area of a Triangle
- Minors and Cofactors
- Ad joint and Inverse of a Matrix
- Applications of Determinants and Matrices

Unit III: Continuity and Differentiability

- Continuity
- Differentiability
- Exponential and Logarithmic Functions
- Logarithmic Differentiation
- Derivatives of Functions in Parametric Forms
- Second Order Derivative
- Mean Value Theorem

Unit IV: Differential Equations

- Introduction and Basic Concepts
- General and Particular Solutions of a Differential Equation
- Formation of a Differential Equation whose General Solution is given
- Methods of Solving First Order, First Degree Differential Equations

Practicum

1. To apply matrices and determinants to find number of solutions of an a linear system of *n*-equations in *n*-unknowns.
2. To find area of the parallelogram formed by any two nonzero vectors using determinant.
3. To develop a differential equation model for a real-world scenario.

4. To solve the model analytically and graphically using methods of solving differential equations.
5. To investigate the trends in the values of different functions as x approaches x_o
6. To explore or investigate the slope of tangents and rates of change of functions in different situations.

Suggested Readings

- Andreescu (2014). Essential Linear Algebra with Applications: A Problem-Solving Approach, Birkhäuser; Softcover reprint of the original 1st Edition.
- Bronson, Richard (2011). Schaum's Outline of Matrix Operations (Schaum's Outlines), McGraw-Hill Education, 2nd Edition.
- Bronson, Richard (2014). Schaum's Outline of Differential Equations, Schaum's Outlines, McGraw-Hill Education, 4th Edition.
- Friedland, Shmuel (2015). Matrices: Algebra, Analysis and Applications, World Scientific Publishing Co Pte Ltd.
- Narayan, Shanti, Differential Calculus, S. Chand and Co.: New Delhi.
- Raisinghania, M. D. (2017). Ordinary Differential Equations, S. Chand & Co Ltd.

SEED363A	PHYSICS III	4

Course Overview

Physics is the branch of science concerned with the properties of matter and energy and the relationships between them. It is based on mathematics and traditionally includes mechanics, optics, electricity and magnetism, acoustics, and heat.Physics is an experimental science and the scientific method emphasizes the need of accurate measurement of various measurable features of different phenomena or of manmade objects.The study of Physics III involves the study of basic concepts in Crystal Structure, Basics of Electronics, Transistors and Thermodynamics.

Objectives

The course will enable the student-teachers to –

- Acquaint the students with the basics of crystallography and laws depicting the crystal structure.
- Introduce the fundamental concepts of electronics, simple electronic devices and their working.

- Explain the basic laws and applications of thermal physics

Unit I: Crystal Structure

Bravais lattice, Miller indices, inter-planar spacing, chemical bonding in solids, X-ray diffraction, Bragg`s law, determination of crystal structure: powder method and rotating crystal method, Defects in crystal.

Unit II: Basics of Electronics

Semiconductors, types of semi-conductors (qualitative), P-N junction diode, energy band diagram, biasing, I-V characteristics, regulated power supply, Zener diode, Light Emitting Diode (LED), Varactor diode, solar cell.

Unit III: **Transistors**

Bipolar Junction Transistor (BJT), Configurations (CB,CE and CC), Characteristic curves of transistor , logic gates, DeMorgan`s theorem, AND, OR, NAND, NOR, XOR, XNOR.

Unit IV: **Thermodynamics**

Introduction, Concept of temperature, heat. Thermodynamics- system, state, equilibrium, process. Reversible and Irreversible processes. Work, Internal energy. First law of Thermodynamics, Applications of first law. Heat Engine, Carnot cycle. Heat Pump, Second law of thermodynamics, Entropy, Third law of thermodynamics.

Practicum

1. To measure the unknown resistance of wire using Ohm`s law.
2. To study the V-I characteristics of P-N junction diode.
3. Study of transistor characteristics (CB, CE, CC configurations).
4. To verify experimentally OR, NAND, NOT, NOR, NAND gates.

Suggested Readings

- Avadhanulu, M.N. and Kshirsagar, P.G. A Textbook of Engineering Physics, S. Chand.
- Mehta, V. K. Principles of Electronics, S. Chand.
- Pillai, S.O. Solid State Physics, New Age International Limited.

SEED365A	CHEMISTRY III	4

Course Overview

This course divided into four units Alcohols, Phenols and Monocarboxylic acids, Periodicity of Elements, The s-block and P-block elements and Solid, Liquid, Gases State. The course deals primarily with the basic principles to understand the structure and reactivity of organic molecules containing Alcohols, Phenols and Monocarboxylic acids. The purpose is to provide a general outline about the s and p block elements and define the position and arrangement of elements in the periodic table.This course provides knowledge to the student to learn and improve their skill and improve their information about the concept of real gases and ideal gases behaviour. Learn about preparation,physical properties and reaction of alcohol, phenol, carboxylic acid.

Objectives

The course will enable the student-teachers to –

- Build a basic knowledge about the some important functional group such as Alcohols, phenols and carboxylic.
- Learn about s and p block elements and define the position and arrangement of elementsin the periodic table.
- Enhance the knowledge about solid, liquid and gases state.
- Emphasise on the properties of s and p block elements along with the knowledge about generalized concept of Solid, Liquid, and Gaseous State.

Unit I: Alcohols, Phenols and Monocarboxylic Acids

Alcohols: preparation,physical properties and reaction of alcohol.

Phenols; Preparation, Cumene Hydroperoxide method, from dizonium salts, Reaction-Electrophilic Substitution, Nitration, halogenation & salphonation, Reimer-Tiemann Reaction, Monocarboxylic acids:Nomenclature, structure and bonding of carboxylic compounds; Physical properties and acidity of carboxylic acids; Reduction of carboxylic acids; Mechanism of decarboxylation.

Dicarboxylic acids**:** Nomenclature, physical properties and methods of formation; Chemical properties: Reactions of -COOH group, effect of heat and dehydrating agents, reactions of oxalic.

Unit II: Periodicity of Elements

Detailed discussion of the following properties of the elements, with reference to s & p-block. (a) Effective nuclear charge, shielding or screening effect, Slater rules, variation of effective nuclear charge in periodic table. (b) Atomic radii (Vander Waals) (c) Ionic and crystal radii. (d) Covalent radii (octahedral and tetrahedral) (e) Ionization enthalpy, Successive ionization enthalpies and factors affecting ionization energy. Applications of ionization enthalpy. (g) Electro negativity, Pauling's/ Mullikan's/ Electro negativity scales.

Unit III: The S-block and P-block Elements

Production and uses of metals; Chemical reactivity and trends in alkali and alkaline earth metals; Structure and properties of oxides, halides and hydroxides;

The p-block elements group III and IV:Structures of crystalline boron; Crystal structures of borides, boranes and carboranes; Metallocarboranes and their chemistry; Boron halides; Boric acid; Borates; Boron-nitrogen compounds; Chemical reactivity and group trends; Carbon: Allotropic forms, compounds; Graphite intercalation compounds; Carbides.

Unit IV: Solid, Liquid, Gases State

Unit cell, Lattice point (Def) , Defects in crystals- Stoichiometric and Nonstoichiometric defects crystal system , Properties of solids ,Types of solids, Liquid State:- Structural differences. Between solids liquid & Gases, Properties of liquid – Surface tension Viscosity, Vapour pressure, Liquid crystal & its classification in somatic & nematic type, Application of liquid crystal. Gaseous State:- Intermolecular attractive forces , Deviation of real gases from ideal behavior.

Practicum

1. Determination of boiling point of liquid compounds. (Boiling point lower than and more than 100° C).
2. Benzolyation of one of the following compounds: amines (aniline, o-,m-,p-toluidines) and phenols (βnaphthol, resorcinol) by Schotten- Baumann reaction
3. Nitration of one the following compounds: nitrobenzene, chlorobenzene, bromobenzene.
4. Determination of Fe (II) using KMnO4 with Oxalic Acid as Primary Acid Standerd.
5. Determination of CU (II) using Na2 S2O3 with K2Cr2O7 Acid as Primary Standard

Suggested Readings

- Bahl, A. and Bahl, B. S. Advanced Organic Chemistry, S. Chand and Co. Ltd., New Delhi.
- Bahl, Arun, Essentials of Physical Chemistry, S. Chand Publishing.
- Finar, I. L. Organic Chemistry (Volume 1), Dorling Kindersley (India) Pvt. Ltd., Pearson Education.
- Morrison, R. N. and Boyd, R. N. Organic Chemistry, Dorling Kindersley (India) Pvt. Ltd., Pearson Education.
- Pandey, O. P., Bajpai, D. N. and Giri, S. Practical Chemistry for B.Sc. I, II and III Students of All Indian Universities.
- Puri, B. R., Sharma, L. R. and Kalia, K. C., Principles of Inorganic Chemistry, Shobhan Lal Nagin Chand & Co., New Delhi.
- Puri, B. R., Sharma, L. R. and Pathania, M. S. Principles of Physical Chemistry, Vishal Publishing Company.
- Vogel, A. I. A Textbook of Quantitative Inorganic Analysis, ELBS.

SEED367A	BIOLOGY III	4

Course Overview

Biology III provides an overview of the structural and functional organization of plants and animals at cellular level. It covers cell biology techniques involving complex equipment for the molecular study of cell and its component. It gives a clear and succinct idea of the genetic basic of life and the inheritance of the traits. Developmental biology includes the reproductive phases of life and its development. In the end this course connects the environmental sciences with the life of plants and animals and focusses on the interference of pollution on the life on earth.

Objectives

The course will enable the student-teachers to –

- Understand the structural and functional organization of plants and animals.
- Study the physiological mechanisms like respiration, digestion and reproduction in plants and animals.
- Study the genetic basis of life and its role in inheritance and structural organization.
- Study the embryological development of life.
- Understand the interference of pollution and its prospective impact on human, plant and animal life.
- Have a practical knowledge of various mechanisms through preforming various experiments.

Unit I: Structure and Function

- Plants: Types of tissues (xylem, pholem, stomata) in relation to processes - transpiration, ascent of sap, photosynthesis (ATP generation), cellular respiration, growth and development.
- Animals: Study of digestion, respiration, circulation, excretion, transmission of nerve impulse, hormonal regulation.

Unit II: Cell Biology and Genetics

- Interaction of genes: epistasis, co-dominance, polygenic inheritance, multiple alleles. Linkage, crossing over and genetic maps.

- Techniques in Cell Biology: microscopy, fractionation, tissue culture and somatic cell hybridization, DNA technology.

- Nucleus and Nucleic acids: structure of chromosomes-prokaryotes and eukaryotes DNA replication, protein synthesis, genetic control, gene mutation and chromosomal aberrations.

- Heredity and variation: Mendelian Inheritance; Deviations from Mendelism– Incomplete dominance, Co-dominance, Multiple alleles and Inheritance of blood groups, Pleiotropy; Elementary idea of polygenic inheritance; Chromosome theory of inheritance; Chromosomes and genes; Sex determination– In humans, birds, honey bee; Linkage and crossing over; Sex linked inheritance- Haemophilia, Colour blindness; Mendelian disorders in humans– Thalassemia; Chromosomal disorders in humans; Down's syndrome, Turner's and Klinefelter's syndromes.

- Molecular Basis of Inheritance: Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging; DNA replication; Central dogma; Transcription, genetic code, translation; Gene expression and regulation– Lac Operon; Genome and human genome project; DNA finger printing.

Unit III: Developmental Biology

- Reproduction in organisms: Reproduction, a characteristic feature of all organisms for continuation of species; Modes of reproduction – Asexual and sexual; Asexual reproduction; Modes- Binary fission, sporulation, budding, gemmule, fragmentation; vegetative propagation in plants.
- Sexual reproduction in flowering plants: Flower structure; Development of male and female gametophytes; Pollination–types, agencies and examples; Outbreedings devices; Pollen-Pistil interaction; Double fertilization; Post fertilization events– Development of endosperm and embryo, Development of seed and formation of fruit; Special modes– apomixis, parthenocarpy, polyembryony; Significance of seed and fruit formation.

- Human Reproduction: Male and female reproductive systems; Microscopic anatomy of testis and ovary; Gametogenesis- spermatogenesis & oogenesis; Menstrual cycle; Fertilisation, embryo development up to blastocyst formation, implantation; Pregnancy and placenta formation (Elementary idea); Parturition (Elementary idea); Lactation (Elementary idea).
- Reproductive health: Need for reproductive health and prevention of sexually transmitted diseases (STD); Birth control- Need and Methods, Contraception and Medical Termination of Pregnancy (MTP); Amniocentesis; Infertility and assisted reproductive technologies – IVF, ZIFT, GIFT (Elementary idea for general awareness).

Practicum

1. Working out dihybrid ratios with seeds.
2. Epistasis.
3. Experiment on transpiration.
4. Oxygen evolution in photosynthesis.
5. Anaerobic - germinate seeds (Hg level).
6. Grow seeds and measure and record growth pattern.
7. Effect of IAA on decapitated plant.
8. Effect of salt concentrations on PBC.
9. Qualitative estimations of proteins, carbohydrates (sugars & starch) and fats.
10. Abnormal constituents of urine.
11. Chick embryology : 18 hrs., 24 hrs., 33 hrs., 72 bins,
12. Slides of frog blastula, gastrula, Neurula stages.
13. Study of a quadrat (Ecology).
14. Water analysis.

Suggested Readings

- Beri, A.K. (1981).Textbook of Animal Physiology. EMK Pub.: North Suite, 313 Ponte.
- Burns, S. (1980). Science of Genetics: An Introduction to Heredity, McMillan: New York, 4th Edition.
- DeRobertis, EDP and DeRobertis, EMF. Cell and Molecular Biology, Saunders and Co: USA,
- Devlin, R.M. and Witham, F.H. Plant Physiology, CBS Publishers and Distributors:

Shahadara.

- Nielson, Schmidt (1973).Principles for Animal Physiology, Prentice Hall: New Delhi.
- Noggle, G.R. and Fritz, G. J. (1976).Introductory Plant Physiology, Prentice Hall: New Delhi.
- Odum E. P. (1971). Fundamentals of Ecology, Saunders and Co.: London, 3rd Edition.
- Raven, P.H. and Johnson (1995).G.B. Biology, Brown Publisher: England.
- Verma, P.S. (1986). Ecology, Chand Publishers: New Delhi.

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SEED369A	HISTORY III	4

Course Overview

The course attempts to make students aware about the social, political, religious and economic conditions of different empires that existed during the past. It aims to shift focus away from the large systems and trends and probes the connection between culture, identity and power. Through these issues, it looks at the history of colonialism, imperialism and modes of resistance.

Objectives

The course will enable the student-teachers to –

- Trace the historical development of Mughal Empire.
- Study about the state policy of Rajputs.
- Study of rise of Maratha Power under Shivaji's rule.
- Study the causes of downfall of Mughal Empire.

Unit I: Babur and Akbar

- Invasion, conquests, personality.
- Humayun - Struggle, exile, restoration.
- Shershah Suri - Civil, military and revenue administration achievements.
- Conquests, Rajput policy, religious policy
- Deccan policy, revolts, consolidation of empire
- Revenue administration, Mansabdari system, estimates of Akbar

Unit II: Jahangir and Shah Jahan

- Accession, twelve ordinances, revolts, influence of Noorjahan, Deccan policy, character of Nurjahan, Estimate of Jahangir
- Accession, early revolts, N.W.F. policy, Deccan policy, Central Asian policy, War of succession

Unit III: Aurangzeb

- Early career, military exploits, religious policy, Deccan policy, Rajput policy, Revolts and reaction, Causes of failure of Aurangzeb character and personality.
- Causes of downfall of Mughal Empire

- Invasion of Nadir Shah and Ahmad Shah Abdali

Unit IV: Shivaji

- Rise of Maratha Power under Shivaji, relations with Mughals, Sambhaji, Rajaram
- Administration-Central, provincial, military, administration, revenue administration
- Law and justice
- Development of education and literature
- Architecture, painting

Suggested Readings

- Chandra, Satish (2007). A History of Medieval India, Orient Black Swan. New Delhi.
- Dahiya, Poonam Dalal (2017). Ancient and Medieval India, McGraw Hill, Delhi.
- Mahajan, V. D. (1991). History of Medieval India, S. Chand Publication, New Delhi.
- Mehta, J. L. (2009). Advanced Study in the History of Medieval India, Vol. III: Medieval Indian Society and Culture. Repro Books, New Delhi.

SEED371A	POLITICAL SCIENCE III	4

Course Overview

The course deals with sources as well as features of the ancient Indian Political Thought based on different approaches. The course will provide an insight into the philosophies of social and political thinkers of the past and also about the thinkers and reformist of contemporary India.

Objectives

The course will enable the student-teachers to –

- Study the sources and features of Ancient Indian Political Thought.
- Know about the contributions made by different scholars in the field of Economics and Politics
- Study the religious and social reforms undertaken by Rammohan Roy and Pandita Ramabai
- Know about the revolutionaries of India.
- Study about the rise of Nationalism and the contribution of eminent leaders in creating a fervour for nationalism.

Unit I: Traditions of Ancient Indian Political Thought

- Sources & Features of Ancient Indian Political Thought,
- Manu: Social Laws,
- Kautilya: Arthasastra,
- Theory of the state

Unit II: Renaissance Thought

- Rammohan Roy: Religious & Social reform
- Pandita Ramabai: Gender

Unit III: Early Nationalism

- Dadabai Naoroji: Drain Theory & Poverty
- Ranade M G: The role of the State & Religious Reform,
- Savarker V D: Hindutva or Hindu Culture Nationalism,
- Mohammad Iqbal: Islamic Communitarian Nationalism

Unit IV: Democratic Egalitarianism

- Gandhi: Swaraj and Satyagraha
- Jawaharlal Nehru: Democratic Socialism
- Dr. Ambedkar B R: Annihilation of caste system
- M.N. Roy: Radical Humanism

Suggested Readings

- Gauba, O. P. (2016). Indian Political Thought, Mayur Publications.
- Gauba, O. P. (2018). Social and Political Philosophy, Mayur Publication.

SEED373A	GEOGRAPHY III	4

Course Overview

Human geographers are concerned with the "who", "what", "where", "why", "when", and "how" of humans their interrelationships and their relationship to the environment: The course focuses on the spatial aspects of population growth and distribution, cultural differentiation, urban growth and decline, the spread of ideas and innovations, regional development, and the location of economic activity, as well as problems associated with these processes. This introductory course will introduce students to several subfields of study, including population, urban, economic, cultural, and political geography, as well as fundamental geographic concepts. Human Geography is a broad dynamic domain that reflects the developments and conditions in the contemporary world. It is a field of inquiry and an academic discipline with its own traditions, objectives and approaches to the changing world. It involves an examination of the setting in which people live their lives as part of a continual process of struggle and transformation. The central concern of the course is the analysis of the relationship between society, place and space. It focuses on social, economic, political, cultural and human-environment processes and patterns and how they change over space and time. The course aims to engender a critical geographical perspective on the past, present and future development of the social world. This critical viewpoint is of crucial importance in the generation of a broad and informed understanding.

Objectives

The course will enable the student-teachers to -

- Understand the nature and perspective of geography.
- Know about the population and cultural patterns and processes.
- Develop an understanding of Contemporary globalization and the interaction between people and their environment.

- Analyse the economic development, uneven development, urbanization and urban life.
- Teach the use of spatial concepts and landscape analysis to examine the human organization of space.
- Teach the use and interpretation of maps, spatial data sets and geographic models when analyzing human diversity.

Unit I

Human Geography: Nature and scope of Human Geography, Approaches to the Human Geography, Determinism, Environmental Determinism, Possibilism, Neo-determinism, ecological and Behaviouralism.

Unit II

People: Trends and patterns of population growth: determinants and patterns of population distribution; theories, demographic transition; Human migration, Patterns of human development.

Unit III

Human Activities: Primary: Hunting, gathering, Herding (Nomadic & Commercial) Lumbering fishing, mining and agriculture; Agricultural practices; some major crops. Secondary: - Industries: Classification, Theories of localization, major Industries, recent trends in industries, world comparisons. Tertiary:-(Services). Quaternary-Quinary activities. Planning in India: target area planning, idea of sustainable development.

Unit IV: Practicum

Elements and classification of maps, scales, map-projections, finding directions, latitudes, longitudes and calculation of local & standard time, Identification & Analysis of relief forms: Topographical Maps and interpretation. Weather-instruments and interpretation of weather maps. Digital mapping, Remote sensing, Visual interpretation.

Suggested Readings

Gamier, B. G. (1963). Practical Work in Geography, Edwar Arnold, London.
Hagget, P. et.al. (Ed.) (1995). Diffusing Geography: Essays for Peter Haggett, Blackwell, Oxford.
Hudson, F. S. (1976). Settlement Geography. Macdonald and Evans, Plymouth.
Jarrett, H. R. (1977). Geography of Manufacturing, Macdonald and Evans, Plymouth.
Jasbir, S. and Dhillon, S. S. (1984). Agricultural Geography, Tata McGraw Hill, New Delhi.
Minsull, R. (1970). The Changing Nature of Geography. Methuen: London.
Monkhouse, E. J. (1970). Dictionary of Geography, Aldine, Chicago.
Sharma, R. C. and Vatal, M. (1980). Oceanography for Geographers, Chaitanya, Allahabad.
Strahler, A. N. (1983). A Modern Physical Geography, Wiley, New York.
Trewartha, G. T. (1960). An Introduction to Climate, McGraw Hill: New York.

SEED375A	ECONOMICS III	4

Course Overview

Government policies and procedures affect almost everything that we do in our daily lives. The theme of the course is to study the role of government in Indian economy and to seek the answers to the following questions -

Why nations trade? What they trade? and who gains (or not) from this trade? The motives for countries or organizations to restrict or regulate international trade and the effects of such policies on economic welfare are also covered in this syllabus.

Objectives

The course will enable the student-teachers to -

- Create awareness about different types of taxation and expenditures in an economy with knowledge.
- Develop an understanding of foreign exchangemechanism.
- Evaluate the effectiveness of the Government policies.
- Familiarise with various methods of finance.
- Develop an understanding about International trade.

Unit I: Public Finance

- Introduction and definition of public finance
- Role of Government in the Economic Activity; Allocation, Distribution and Stabilizations
- Public, Private and Merit Goods
- Meaning and concept of Public expenditure and revenue
- Principle of maximum social advantage

Unit II: Government Revenue and Expenditure

- Sources of revenue and Allocation of resources
- Government Budget, Budget Deficit
- India Taxation system with recent Reforms (GST)
- Indian Federal Finance
- Public Expenditure in India

Unit III: International Trade

- Interregional and International trade
- International trade and growth
- Absolute and Comparative Advantage
- BOP and BOT, Free trade and protection
- Tariff and non-tariff methods
- Concept of foreign exchange mechanism
- Foreign trade of India and trade policy

Unit IV: Trade Reforms in India

- Liberalization
- Privatization
- Globalization
- FDI, SEZ
- Inclusive growth.

Suggested Readings

- Bhagwati. J. (1981), International Trade, Cambridge University Press, London.
- Jhingan, M. L. International Economics.
- Lekhi, R. K., Singh, Joginder. Public Finance, Kalayani Publishers.
- Mannur, H.G (2000). International Economics.
- Mithani, M. D. International Economics.
- Pilbeam, Keith (1998). International Finance, Palgrave.
- Salvatore, D. (1997). International Economics, PHI, New York.
- Sodorston, Bo. (1991). International Economics, The Macmillan Press Ltd. London.
- Vaish, M. C. and Singh, Sudama. International Economics.

Scheme of Studies and Syllabi for B.Ed. Programme as per Choice Based Credit System (CBCS)

Semester VI			
S.No.	**Course Code**	**Course Title**	**C**
1	SEED348A	Contemporary India and Education	4
2	SEED350A	Pedagogy of Environmental Studies	4
Optional Course - Pedagogy (Any One)			
3	SEED352A	Pedagogy of Language	4
	SEED354A	Pedagogy of Mathematics	
	SEED356A	Pedagogy of Natural Science	
	SEED358A	Pedagogy of Social Science	
4	SEED360A	Developing Instructional Aids	2
5	SEED362A	School Engagement II	2
*Liberal Course (Optional IV)			
6	SEED364A	English IV	4
	SEED366A	Hindi IV	
	SEED368A	Chinese IV	
	SEED370A	Mathematics IV	
	SEED372A	Physics IV	
	SEED374A	Chemistry IV	
	SEED376A	Biology IV	
	SEED378A	History IV	
	SEED380A	Political Science IV	
	SEED382A	Geography IV	
	SEED384A	Economics IV	
		Total	**20**

SEED348A	CONTEMPORARY INDIA AND EDUCATION	4

Course Overview

India, as a country and society has been in transition and has evolved as the melting pot for various diversities including religious, cultural, socio-economic, linguistic, geographical, regional and philosophical thoughts operating through maturing democratic system of interactions and governance. The country administered through rule of law and the constitution embodies the aspirations for our evolution as a cohesive society and a strong and leading nation in the world community. The continuing evolution of our egalitarian society and peaceful transformation of the nation needs to be understood by the student-teachers. Study of this course will enable the students to understand socio-economic, linguistic, geographical etc. ethos of the nation, thereby help them effectively discharge their role in the society with numerous diversities. The student-teachers will also understand the role of education as an intervention tool for desired changes in the country. The course will help the students to appreciate the influence of social set-up on education in which it operates.

Objectives

The course will enable the student-teachers to -

- Appreciate the unity and strengths of Indian diversities based on region, religion, gender, languages, socio-economic factors like caste, means of livelihoodetc.
- Acquire knowledge about the salient features of our Constitution and constitutional measures to protectdiversities
- Develop understanding of the issues in contemporary India like industrialization, urbanization, globalization, modernization, economic liberalization and digitalization etc.
- Appraise about the policy initiatives taken in education reform during pre- and post-independentIndia.
- Develop overall understanding of the working and recommendations of various Commissions and Committees constituted for improving education in thecountry.
- Appreciate Innovations and new measures towards universalization of education including the role of Panchayati RajInstitutions.
- Familiarize with various incentive schemes like mid-day meal, support to

economically, socially and educationally backwardcommunities

- Develop understanding of the issues, and challenges faced by Indian contemporary Society

Unit I: Contemporary India

- Social Stratification-forms and function; caste and class; region andreligion;
- Types of Society-tribal, Agrarian; industrial, postindustrialsociety;
- Educational scenario of India: diversity in terms of educational opportunities-religion, caste, class, gender, language, region andtribes;
- Challenges in achieving universal elementaryeducation
- Impact of Urbanization; Industrialization; Globalization, modernization, economic liberalization and digitalizationetc.
- Population explosion and educational challenge: Population size; composition and distribution in India; consequences of populationgrowth;

Unit II: Constitutional Provisions and Education

- Constitutional provisions on education that reflect Nationalideals: Democracy and the values of equality, justice, freedom, concern for others' well- being, secularism, respect for human dignity and rights.
- Aims and purposes of education drawn from constitutionalprovision;
- Constitutional interventions for universalization of education and RTE Act2009;
- Decentralization of Education and Panchayati Raj (specifically though 7^{3rd} and 7^{4th}amendment);
- Role of Central and State governments in the development ofeducation

Unit III: Policy Framework for Development of Education in India

- Overview of educational reform in the Pre-independence period- Macaulay' minutes, WoodDispatch, Hunter Commissions; Sargent Report, Basic Education;

- Education in Post-Independence Period: Mudaliar Commission(1952) Education Commission (1964-66);NPE 1968;NPE 1986 and its modified version 1992; KnowledgeCommission;
- LanguagePolicy
- Learning Without Burden-1993
- Justice VermaCommission-2012

Unit IV: Contemporary Indian Education: Concerns, Issues and Initiatives

- Challenges in Implementation of RTE Act 2009
- Right to Education and Universal Access:
- Issues of a) Universal enrolment b) Universal retention c) Universal success
- Issues of quality and equity.
- School safety

  The above to be discussed with specific reference to physical, economic, social and cultural access, particularly to girl child and weaker sections as well as differently-abled children.
- Sarva Shiksha Abhiyan (SSA)
- Rashtriya Madhyamik Shiksha Abhiyan (RMSA)
- Mid-day Meal
- Schemes for girls, SC, ST and Marginalised Group
- ICT In School Education- National Repository of Open Educational Resources (NROER)
- Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT)
- Equality of Educational Opportunity
- Meaning of equality and constitutional provisions
- Prevailing nature and forms of inequality, including dominant and minor groups and related issues

Practicum (Any One)

1. Case study of different kind of schools.
2. Conflicts and Social Movements in India: Women, Dalit and tribal movements.
3. Marginalization and education of children from slums and distress migration

4. Impact of electronic media on children.
5. Conduct of survey of government and private schools to identify various forms of inequality.
6. Survey of nearby locality to find out the causes of low literacy.

Suggested Readings

- Das, Manoj (1999). Sri Aurobindo on Education, National Council for Teacher Education, NewDelhi.
- GOI (1966): 'Education and National Development". Ministry of Education, Government of India.
- GOI (2004): Learning without Burden, Report of the National Advisory Committee. Education Act. Ministry of HRD, Department of Education, October.
- Govinda, R. (2011). Who goes to school?: Exploring exclusion in Indian education. Oxford UniversityPress.
- Govt. of India (1986). National Policy on Education, Min. of HRD, NewDelhi.
- Govt. of India (1992). Programme of Action (NPE). Min ofHRD.
- Krishnamurti, J. (1992). Education and world peace. In Social responsibility. KrishnamurtiFoundation.
- Kumar, K. (2013). Politics of education in colonial India. India:Routledge.
- Mohanty, J. (1986). School Education in Emerging Society, SterlingPublishers.
- Mookerji, Radha Kumud (1999). Ancient Indian Education (Brahmanical and Buddhist), Cosmo Publications, New Delhi.
- Mukherji, S. M. (1966). History of Education in India, Acharya Book Depot,Baroda.
- Naik, J. P. (1982). The Education Commission and After. APHPublishing.
- NCERT (1986). School Education in India – Present Status and Future Needs, New Delhi.
- NCERT (2002): Seventh All India School Education Survey, NCERT: NewDelhi.
- NCERT. (2005). National curriculum framework. (NCF 2005). New Delhi:NCERT.

- NCERT. (2006a). Position paper-National focus group on education with specialneeds
- NCERT. (2006b). Position paper-National focus group on gender issues in the curriculum (NCF 2005).NCERT.
- NCERT. (2006c). Position paper-National focus group on problems of scheduled caste and scheduled tribe children (NCF 2005). New Delhi:NCERT.
- NCERT. (2006d). Position paper-National focus group on teaching of Indianlanguage
- Sainath, P. (1996). Everybody loves a good drought. Penguin Books NewDelhi.
- Sykes, Marjorie (1988). The Story of Nai Talim, Naitalim Samiti:Wardha.
- UNDPA. Human Development Reports. New Delhi. Oxford: Oxford University Press.
- UNESCO (1997). Learning the TreasureWithin.
- UNESCO (2004) Education for All: The Quality Imperative. EFA Global Monitoring Report, Paris.
- Varghese, N. V. (1995). School Effects on Achievement: A Study of Government and Private Aided Schools in Kerala. In Kuldip Kumar (Ed.) School effectiveness and learning achievement at primary stage: International perspectives. NCERT. NewDelhi.
- World Bank (2004). Reaching the Child: An Integrated Approach to Child Development. Oxford University Press,Delhi.

SEED350A	PEDAGOGY OF ENVIRONMENTAL STUDIES	4

Course Overview

This course aims to expose students to the significance of EVS as a curricular area at the primary level, while engaging in a critical enquiry of EVS as a school subject; students also learn to develop insights into the issues of curriculum design and implementation.

Objectives

The course will enable the student-teachers to –

- Develop an understanding about the concept of EVS as a discipline and its interrelationship with different school subjects.
- Study of different approaches in the construction and transaction of curriculum**.**
- Understanding the pedagogy of EVS.

Unit I: **Concept of Environmental Studies (EVS)**

Evolution and significance as a curricular area at primary level; EVS - an approach, a discipline or both; environmental studies and environmental education; its scope-integration related to the physical, social, historical and cultural aspects of the environments.

Unit II: **Basic Considerations in Developing Curriculum in EVS**

Relating cognitive growth of children to the development of concepts; alternative frameworks; differences in approaches to the construction and transaction of curriculum at classes I and II and classes iii to V; a review of different sets of curricular materials including text books.

Unit III: **Understanding the Method of Science**

Process approach in EVS; planning for and organisation of teaching-learning activities; unit and lesson planning; role of inquiry, experiment, discussion, drama etc.; evaluation and testing.

Unit IV: Practicum (Any Two)

1. Using equipment and materials : films, reports, documents, 11,ewspapers, local maps, atlas, wall charts; map drawing and reading weather charts; making charts, diagrams and models.
2. Collection and presentation of specimens: leaves, rocks, stamps, flags, news items etc. (classifying the material collected and maintaining a museum).
3. Undertaking a project e.g. planting and nurturing a tree (in science)' and an oral history project (in social studies).

Suggested Readings

- CEE. Joy of Learning, Handbook of Environmental Educational Activities, CEE: Ahmedabad.
- Centre for Cultural Resource and Training (1983). Environmental Education and Art Activities, CCRT: New Delhi.
- Centre for Environmental Education (1997). The Green Teacher: Ideas, Experiences and Learnings in Educating for the Environment, CEE: Ahmedabad.
- Collette, A. T. and Chiapetta, E. L. (1984). Science Instruction in Middle and Secondary Schools, Times Mirror/Mosky College Publishing: St. Louis.
- Driver, R., Guesne, E. and Tiberghien (1985). Children's Ideas in Science, Open University Press: Milton Keynes.
- Hardeovik, S. W. and Hottgreive, D. E. (1996). Geography for Educators: Students, Themes and Concepts, Prentice Hall: UK,
- Harlan, J. (1995). Science Experience for the Early Childhood Years, Mc Millan: New York.
- Martin, R. et.al. (1998). Science for All Children, Allyn and Bacon: New York.
- NCERT (1988 and 2001). National Curricular Framework for Elementary and Secondary Schools, NCERT: New Delhi.
- Rajput, J. S. (1994). Experience and Expectations in Elementary Education, Anamika Prakashan: Delhi, Chapter 6.
- Report of the seminar on Environmental Studies (1995). Vidya Bhawan Society: Udaipur, 23-2Sth. November.
- UNESCO (1979). Source Book for Science Teaching, Universities Press (India) Ltd.: New Delhi.

- UNESCO-UNEP (1980). Environment Education: What, Why, How, International Environment Series UNESCO: Paris, Chap. 9 and 10 (pp. 7-17).
- UNESCO-UNEP (1990). Basic Concepts in .Environmental Education, Environment Education Newsletter, UNESCO: Paris, June, 15 (2).
- Vygotsky, L. S. (1980). Mind in Society, Harvard University Press: Cambridge, Chapter 6.

SEED352A	PEDAGOGY OF LANGUAGE	4

Course Overview

This course offers an in-depth study of language learning as a process determined not only by an awareness of language structure but one that is critically influenced by the sociocultural aspects of a child's milieu. The course also equips students with skills of designing activities and developing techniques to transact the language curriculum.

Objectives

The course will enable the student-teachers to –

- Understand factors responsible for language development in term of social and linguistic stereotypes, ethnocentrism and authoritarianism.
- Understand the significance of multilingual societies in language acquisition.
- Develop an understanding about the method of teaching a language and evaluation techniques employed for the same.

Unit I

The Learner: social and individual aspects; nature of family background; schooling; exposure; the role of mass media; affective filter; attitudes; motivation; aptitude; social and linguistic stereotypes; ethnocentrism; authoritarianism.

Unit II

Learning Contexts: typology and learning situations, monolingual and multilingual societies; first and second language acquisition.

Language acquisition in multilingual settings: theory of interference; contrastive analysis and its limitations; error analysis; errors as stage in the process of learning: interlanguage; approximative systems.

Unit III

Methods and Models : grammar - translation method; direct method; the structural approach; audio-lingualism; communicative approaches; natural method; total physical response; sociolinguistic approaches, teaching in a multilingual classroom.

Unit IV

Evaluation: taxonomy of tests: discrete point and integrative tests; doze, dictation and translation-new perspectives; communicative testing; process evaluation; participatory evaluation.

Suggested Readings

- Anderson, Richard C. et. al. (Eds.) (1984). Learning to Read in American Schools, Lawrence Erlbaum Associates: New Jersey.
- Bissex, G. Gyns (1980). A child learns to write and read, Harverd University Press: Cambridge.
- Butler, A. and Turbill, J. (Eds.) (1984). Towards a Reading Writing Classroom, Heinemann: Portsmouth, NH.
- Donald, J. Len and Charles, K. Kinzer (1995). Effective Reading Instruction, Prentice Hall: UK, Chapters 10 and 11.
- Mason, J. M, and Sinha, S. (1993). Emerging Literacy in the early childhood years: Applying a Vygotskian model of learning and development, In B. Spodek (Ed.), Handbook of Research on the Education of Young Children, McMillan: New York, pp. 137-150.
- Rhodes, Lynnk and Nancy, L. Shankin (1993). Windows into Literacy: Assessing Learners K-8, Heinemann: Portsmouth, NH.
- Rosenblatt, Louise M. (1980). What Fact Does This Poem Teach? Language Arts, Vol. 57 No. 4.
- Teale, W. and Sulzby, E. (Eds.) (1986). Emergent Literacy: Writing and Readings, Nerwood: New Jersey.
- Tompkims, Gail E. (1994). Teaching Writing: Balancing Process and Product, McMillan; California.

SEED354A	PEDAGOGY OF MATHEMATICS	4

Course Overview

This course attempts to develop an understanding of the nature of mathematics and of children's thinking and implications for pedagogical practice at the upper primary level.Pedagogy of Mathematics deals with developing varying skills specific to the teaching of Mathematics. Study of this course helps in developing logical thinking, reasoning and representational abilities regarding various topics like geometry, practical arithmetic, number, algebra, ratio and proportion etc. Evaluation in mathematics gives us an understanding of how children learn and work and some ways to solve their problems.

Objectives

The course will enable the student-teachers to –

- Develop basic understanding in to the nature of Mathematics in school curriculum in terms of structure, language, notation, concepts and procedures.
- Contribute to the development of logical thinking, reasoning and representation of formal and abstract operation.
- Understand about the pedagogical and evaluation techniques of teaching Mathematics.
- Develop an understanding of application of Mathematics in day to day life.

Unit I

What is Mathematics: patterns; reasoning; generalizations; nature of mathematical statements-axioms and postulates; explanations and proofs; parsimony; necessity and sufficiency.

Nature of mathematics in the curriculum: structure; language; notation; concepts and procedures.

Development of children's logical thinking, reasoning and representation (formal operations and abstraction).

Unit II

Pedagogical considerations in geometry, practical arithmetic, number, algebra, data handling and statistics, ratio and proportional reasoning,

Unit III

Communicating Mathematics: activity; graphical methods; construction; measurement; modelling; computation. Use of computers and calculators in instruction.

Helping children develop a mathematical view of the world, initiating students' investigationsand independent activity and problem solving strategies.

Unit IV

Feedback, testing, evaluation and remedial teaching.

Suggested Readings

- Beagle, E. (ed.) (1970). Mathematics Education, 69th Year Book of NSSE, University of Chicago Press: Chicago.
- Brooks, J. G. and Brooks, M. G. (1993). .Honoring the Learning Process: In search of Understanding the Case for Constructionist Classrooms. Alexandria: V.A.
- Currant, R. and Robbins, H. (1996). What is Mathematics? An Elementary Approach to Ideas and Methods, Oxford University Press: New York.
- Dickson, L., et al. (1984). Children Learning Mathematics - A teacher's guide to recent research, Rinehart and Winston: London.
- Dickson, Linda, Bram, Margaret and Gibson, Olwen (1984). Children Learning Mathematics: A Teachers Guide to Recent Research, Holt, Rinehart and Winston: London.
- Dienes, Z. P. (1959). The Growth of Mathematical Concepts in Children Through Experience, Educational Researchers, 2(i): 9-28.
- Durkin, K. and Shire, B. (Eds.) (1991). Language in Mathematical Education Research and Practice, Open University Press: Milton, Keynes.
- Earnest, P. (Ed.) (1989). Mathematics Teaching - The State of the Art, Palmer Press: London.
- Grouws, P. A. (1992). Handbook of Research on Mathematics Teaching and Learning, Reston: V.A.
- Prevost, F. J. Rethinking How We Teach: Leaming Mathematical Pedagogy, The Mathematics Teacher, Volume 86, (1).
- Robitaille, D. F. and Garden, R. A. (1989). The Study of Mathematics II: Contexts and Outcomes of School Mathematics, Pergammon: Oxford.
- Skemp, Richard R. (1989). Mathematics in the Primary School, Routledge; London.

SEED356A	PEDAGOGY OF NATURAL SCIENCE	4

Course Overview

This course attempts to develop an understanding of the nature and structure of science and also the ability to transact and analyse science curriculum. Pedagogy of Natural Science is a study about the nature of science. Subject of Science is always about enquiry and experimenting about the enquiry. The course creates awareness about scientific processes and skills that are helpful in our daily lives and also helps us to understand pedagogical and evaluative dimensions of science as a school subject.

Objectives

The course will enable the student-teachers to –

- Acquaint the students with the nature and structure of natural science in terms of its integration with different school subjects.
- Appreciate the role of Science in the cognitive growth of a learner and development of understanding of school Science.
- Develop an understanding of different approaches to teaching of Science.
- Acquaint the students with different evaluation techniques in science with reference to cognitive, psycho-motor and affective domains.

Unit I

Nature and structure of natural science; significance of natural science in the curriculum at the upper primary level.

Study of cognitive growth and learning to the development of understanding and appreciation of science, Aims and objectives of teaching science.

Unit II

Disciplinary and integrated approach to· teaching; Levels of disciplinary growth of different natural sciences-descriptive, inductive, causal and formal. Significance and bases of integration; aims and objectives of teaching integrated science. Role of observation, experiment, discovery and intuition.

Unit III

Basic considerations in developing and transacting curriculum. Appraisal of existing curricula including innovative curricula in India and abroad. Text analysis- text book, work-book and teacher's guide.

Unit IV

Evaluation in science; cognitive, psycho-motor and affective aspects. Test construction, analysis and interpretation.

Practicum

1. Devising simple experiments related to topics in Class VI, VII, VIII.
2. Maintenance of Junior Science Laboratory.
3. Development of skills like observation; use of environmental and local resources; improvising apparatus; organising science clubs, fairs, museum and exhibitions.
4. Field trips.

Suggested Readings

- Collette, Alfred T. and Eugene, L. Chiappetta (1994).Science Instruction in the Middle and Secondary Schools, MacMillan: New York.
- Eklavya (1978). Bal Viganik - Class 6, 7, 8. Madhya Pradesh Pathya Pustak Nigam: Bhopal.
- Esler, W. K. (1973). Teaching Elementary Science, Wadsworth: California.
- Gega, P. C. and Peters, J. M. (1998). Science in Elementary Education, Merrill: New Jersey.
- Jevons, F. R. (1969). The Teaching of Science - Education, Science and Society, George Allen and Unwin: London.
- NCERT (1982). Integrated Science Curriculum for Middle Schools, NCERT: New Delhi.
- Sundarajan, S. (1995).Teaching Science in Middle School: A Resource Book, Orient Longman: Hyderabad.
- UNESCO (1966).Source Book for Science Teaching, UNESCO: Paris.
- UNESCO (1971). Integrated Science Teaching in the Asian Region, A Report of a Regional Workshop, organised by UNESCO. Regional Office for Education in Asia, Bangkok.

<u>Students are expected to consult the following journals regularly</u>

1. School Science, NCERT, New Delhi.
2. The American Biology Teacher, National Association of Biology Teachers.
3. The Physics Teacher, American Association of Physics Teachers, USA.

SEED358A	PEDAGOGY OF SOCIAL SCIENCE	4

Course Overview

Permeating across boundaries of individual social science disciplines is the key pedagogic process unfolding in this course. This course will help students in understanding how social science inquiry necessarily includes experiences of interaction in and with society and the environment. Critical thinking, inquiry and search for evidence, examining text-based knowledge in social contexts are essential components of studying this course.

Objectives

The course will enable the student-teachers to –

- Understand the difference between Social Science and Social Studies as school subject.
- Develop concepts, skills and attitudes through the teaching of Social Study.
- Develop an understanding of pedagogical techniques for the study of Social Science.

Unit I

Social Science and Social Studies: defining its scope and nature; rationale for a social studies programme at the elementary school.

Unit II

Developing concepts, skills and attitudes through the teaching of social studies.

Understanding change and continuity, cause and effect, time perspective and chronology, empathy, spatial interaction - to be taught through the following (i) Society: personality, social structure, groups, community, (ii) Civilization: history, culture, (iii) State: authority, citizen (iv) Region: resource, space (v) Market: exchange.

Unit III

Methods and materials: inquiry and evidence based teaching: (i) identification of problems and questions (themes and issues), (ii) importance of empirical evidence, (iii)Assessment of example as evidence.

Teaching Methods: Application of the heuristic/ discovery method in social science; Project - (i) secondary source, (ii) field work. Integrating text based knowledge with the social context, personal/ experiential knowledge as a base for critical thinking.

Unit IV: Practicum (Any Two)

- Critique a historical film, serial or a novel from the view point of authenticity.
- An oral history project. Establish its reliability by comparing with data from other sources.
- Map a locality and its position in the city, keeping in mind the distance and directional relationship to your school or college, mark out institutions and points of interest-e.g. Historical Monuments, Reserve Bank, Local Stock Exchange, Parliament House, etc.
- Study the transport related needs of a community, analyse different vehicles people own and use and their reflection on gender and socio-economic groups in society; assess the economic and environmental aspects of various forms of transport used.

Suggested Readings

- Bauman, Z. (1990). Thinking Sociologically, Basil Blackwell: Malden.
- Carr, E .H. (1961). What is History?, Penguin: England.
- Cooper, Hilary (1982). The Teaching of History, David Fulton: London.
- Cooper, Hilary (1992). The Teaching of History: Implementing the National Curriculum, Taylor and Francis: London.
- Eklavya. Social Science Textbooks for classes VI, VII and VIII, Eklavya: Bhopal, M.P. Revised Ed,
- Ellis, A. (1991). Teaching and Learning Elementary Social Studies, Allyn and Bacon, Massachusetts.
- Giddens, A. (1989). Sociology, Polity Press: Cambridge.
- Gleeson, Denis and Whitty, Geoff (1976). Developments in Social Studies Teaching, Open Books: London.
- Graves, Narman J. (Ed.) (1982). UNESCO Source B?ok for Geography Teaching, Longman: London.
- Gunning, D. (1978). Teaching History, Croom Helm: London.
- Hitchcock, Graham and Hughes, David (1989). Research and the Teacher: A Qualitative Introduction to School-based Research, Routledge and Kegan Paul: London.
- Indian Institute of Advanced Studies (1976). Social Sciences and Social Realities, HAS: Simla.
- Michaelis, J. (1992). Social Studies for Children, Allyn and Bacon: US.

- Servey, R. E. (1967). Social Studies Instruction in the Elementary School, Thomson Press (India) Ltd.: New Delhi.
- Whyte, W. F. (1984). Learning from the Field, Sage: California.
- Williams, Raymond (1979). Key Words: A Vocabulary of Culture and Society, Flaming Co.: London.

SEED360A	DEVELOPING INSTRUCTIONAL AIDS	2

Course Overview

Effective instructional aids are those items that add value to the learning experience. Use of instructional aids helps to focus the attention of the learner, provides details or clarification and saves the time in explaining difficult or abstract concepts to the students. It is appropriate, even recommended, that the students include a variety of instructional aids in their teaching. The instructional facilitates the teaching task undertaken by the young student-teachers.

Objectives

The course will enable the student-teachers to –

- Understand different types of instructional media and materials and its uses.
- Develop the skill in preparing and using different instructional materials.
- Understand the uses of computer assisted learning strategies.

Suggested Activities

Activity 1: Instructional Media: Meaning of instructional media, various kinds of Medias and their characteristics and examples, techniques of preparation and using.

Activity 2: Smart Boards: Techniques and applications of Smart campus/ Smart School/ Smart Boards/ Smart Classroom

Activity 3: Graphics: Categories of graphics (charts, diagrams, graphs, posters, cartoons, comics) their preparation and uses, display of graphics.

Activity 4: Boards: Bulletin boards, magnetic boards and their preparation, Instructional functions, planning of and teaching with educational displays on such boards.

Activity 5: Real Things and Mock Ups: Real things: types–unmodified, modified (models and specimens), their characteristics, techniques of preparation and using.

Activity 6: Power point Presentation: working with text, animation, smart art, graphics, charts, tables, shapes

Activity 7: Audio-visual Media: Educational recordings (via radio, tape recorder and CD player), meaning and characteristics of educational recordings, techniques of preparation and using, Television, video, motion pictures (video and films), VCD/DVD), advantages of television and its use in distance education and in the class room; choosing, using and producing instructional media, media utilization procedures, guidelines for media selection and use.

Activity 8: Computer Assisted Learning: Use of computers for simulation, computers in drill/practice, computers and educational games, computers and tutorials, computer aided evaluation, advantages and limitations in the use of computers in education, techniques of preparation and using.

Suggested Readings

- Aggarwal, J. C. (2015). Essential of Educational Technology; Vikas Publishing House, NewDelhi.
- Mangal, S. K. and Mangal, U. (2016). Essential of Educational Technology; PHI Learning Pvt. Limited, New Delhi.

SEED362A	SCHOOL ENGAGEMENT II	2

Course Overview

The School Engagement II Programme shall be carried out during the sixth semester in local/nearby school or schools. For this, the student may be placed in regional language medium schools; and the rest may be placed in Government, Private, Urban, Rural and Schools for challenged learners.
A student teacher needs to visit at least two types of schools: in the first week to one type of school; and in the second week to another type of school. A brief orientation programme can be arranged before sending the student-teachers to schools to acquaint them with the objectives and modalities of such programme. During this programme, the student-teachers will undertake the different activities in different schools, ensuring maximum participation of the students in all the activities.

Objectives

The course will enable the student-teachers to -

- Interact with elementary school children.
- Explore creative ways of organizing activities for children.
- Reflect upon their experiences.

Student-teachers will undertake the following activities and prepare a report of the same.

Suggested Activities

Activity 1: Beti Bachao and Beti Padhao (Awareness Programme and NGO associated camps).

Activity 2: Health education (Awareness sessions on health &hygiene; healthy habits; nutritious food habits).

Activity 3: Save water (Water harvesting programmes; awareness sessions on save water; Tips for effective use of water).

Activity 4: Interaction with village Panchayat/family members to learn their life style, beliefs, customs & traditions.

Activity 5: Feedback from village members.

*LIBERAL COURSE (OPTIONAL IV)

SEED364A	ENGLISH IV	4

Course Overview

This course introduces students to dramatic literature and its cultural, social, and historical influences. It includes terminology and methods for analysing and evaluating drama including form, thematic development, and style. It contains selected works of different writers which will introduce the students to various genres of dramas.

Objectives

The course will enable the student-teachers to –

- Explain the distinctive characteristics of the drama.
- Identify and differentiate between such forms of drama as tragedy, comedy, satire, and tragicomedy.
- Develop the ability to interpret in dramatic literature such elements as character, action, theme, symbolism, irony, staging, and structure.

Unit I

Dramatic Types:Tragedy and Comedy, Tragi-comedy, Farce and Melodrama, The Masque, The One-Act Play, The Dramatic Monologue (Characteristics, structure and elements)

Unit II

Dramatic Devices: Dramatic Irony, Soliloquy and Aside, Expectation and Surprise, Stage Directions, Prologue, Epilogue (Characteristics and structure)

Unit III

Origin of Indian and English Drama and Theatre: Developments and Movements **(**A Brief History)

Unit IV

Girish Karnad: Nagmandala

William Shakespeare: Hamlet

Suggested Readings

- Abrahams, M.H. (2011). A Glossary of Literary Terms. California: Wadsworth Publishing.
- Iyengar, K.R.Srinivasa. (2012). Indian Writing in English. Sterling Publishers Pvt.Ltd.
- Karnad, G. Three Plays, Naga-mandala, Hayavadana, Tughlaq. Oxford: Oxford, U.P.
- Rees, R. J. (1973). English Literature: An Introduction for Foreign Readers. London: Macmillan.
- Seturaman, V.S and Indra, C.T. (1990). Practical Criticism. Madras: Macmillan.
- Shakespeare, W. (1996). Hamlet. In T. J. Spencer (Ed.), The New Penguin Shakespeare. London, England: Penguin Books.
- William,J. Long (2012). English Literature Paperback. Maple Press.

SEED366A	HINDI IV	4

अस्मितामूलक विमर्श एवं हिंदी साहित्य

खंड- I : विमर्शों की सैद्धांतिकी

- स्त्री विमर्श : अवधारणा और मुक्ति आंदोलन
- दलित विमर्श : अवधारणा और आंदोलन (फूले और अम्बेड़कर)

खंड II दलित विमर्श प्रतिनिधि रचनाएँ

- जूठन : (आत्मकथा) ओम प्रकाश वाल्मीकि
- तड़प मुक्ति की :(नाटक) माता प्रसाद

खंड III स्त्री विमर्श की प्रतिनिधि रचनाएँ

- कहानी : चर्चित दलित महिला कथाकारों की कहानियाँ : डॉ. कुसुम वियोगी

खंड IV: हिंदी साहित्य में स्त्री और दलित विमर्श

- स्त्री और दलित विमर्श में हिंदी साहित्य की पत्रिकाओं का योगदान
- स्त्री और दलित विमर्श दशा और दिशा

सन्दर्भ ग्रन्थ :

- जूठन : ओम प्रकाश वाल्मीकि राधा कृष्ण प्रकाशन
- तड़प मुक्ति की : माता प्रसाद : सम्यक प्रकाशन 32 /3 पश्चिम पूरी नई दिल्ली
- चर्चित दलित महिला कथाकारों की कहानियां :डॉ. कुसुम वियोगी , गौतम प्रकाशन, विश्वास नगर शाहदरा दिल्ली 110032

SEED368A	CHINESE IV	4

Course Overview

This course aims to equip students with a comprehensive understanding of the Chinese language, culture, and society. Through a structured approach, students will delve into various aspects of the Chinese language, including vocabulary acquisition, linguistic structures, and comprehension skills. Additionally, the course will explore the social and cultural context of China, providing insights into Chinese traditions, values, and gender dynamics.

Course Objectives

The course will enable the students to:

1. To read more number of Chinese lessons
2. Have an idea of the Chinese social, cultural, linguistic system

Unit I More number of Chinese lessons

- Learning new words of a foreign language i.e., Chinese
- Development of much richer Chinese Vocabulary
- Gendered vocabularies in Chinese

Unit II: Learn about Chinese social, cultural, linguistic system

- Knowledge of the linguistic system of a foreign language and social and cultural background.
- Ability to perceive China as a country through linguistic knowledge
- Gender awareness through Chinese texts
- Instillation of moral and value system through texts
- Knowledge of the linguistic system of a foreign language and social and cultural background.

Unit III: Writing sentences and texts through dictation

- Comprehension ability of a foreign language
- Scripting in Chinese-English (vice-versa)
- Script down Chinese characters only by listening to the phonetic format

Unit IV: Translation of simple Chinese stories and Texts in English and vice-versa

- Translation ability into a foreign language
- Translation assignments
- Translation ability for Chinese-English translation of simple texts

Suggested Readings

- Integrated Chinese" series by Tao-chung Yao, Yuehua Liu, Nyan-Ping Bi, Liangyan Ge, and Yaohua Shi
- "The Routledge Course in Modern Mandarin Chinese" by Claudia Ross and Baozhang He
- "Chinese Link: Beginning Chinese" by Sue-mei Wu, Yueming Yu, Yanhui Zhang, Weizhong Tian
- "Chinese Society: Change, Conflict and Resistance" by Elizabeth J. Perry and Mark Selden
- "China: A Cultural, Social, and Political History" by Patricia Buckley Ebrey
- "Gender in Modern East Asia" edited by Barbara Molony and Kathleen Uno
- "Chinese Literature: A Very Short Introduction" by Sabina Knight
- "Chinese Characters: Profiles of Fast-Changing Lives in a Fast-Changing Land" by Angilee Shah and Jeffrey Wasserstrom

SEED370A	MATHEMATICS IV	4

Course Overview

Elementary geometry is inadequate for calculating the areas enclosed by curves. Applications of integrals are used to find the area enclosed by these curves. In this course, students shall study some specific applications of integrals to find the area under simple curves. Further, students shall learn how probability is used as a measure of uncertainty of events in a random experiment. They shall also learn concepts of conditional probability, Bayes' theorem, random variable and its probability distribution. In addition, students shall learn correlation and regression analysis based on multivariate distribution. Many applications in mathematics involve systems of inequalities and equations. Students shall learn to apply the systems of linear inequalities and equations to solve some real life problems.

Objectives

The course will enable the student-teachers to –

- Apply integrals to find the area enclosed by these curves.
- Use probability as a measure of uncertainty of events.
- Apply correlation and regression analysis in real-world situations.
- Apply the systems of linear inequalities to solve some real life problems.

Unit I: Integrals

- Integration as an Inverse Process of Differentiation
- Methods of Integration
- Integrals of some Particular Functions
- Integration by Partial Fractions
- Integration by Parts
- Definite Integral
- Fundamental Theorem of Calculus

Unit II: Probability

- Random Experiments
- Event
- Axiomatic Approach to Probability
- Conditional Probability
- Multiplication Theorem on Probability
- Independent Events
- Bayes' Theorem

Unit III: Statistics: Correlation and Regression

- Significance of Measuring Correlation
- Types of Correlations
- Methods of Correlation Analysis
- Advantages of Regression Analysis
- Types of Regression Models
- Simple Linear Regression Model

Unit IV: Linear Programming

- Mathematical Formulation of the Linear Programming problem
- Graphical method of solving linear programming problems
- Different Types of Linear Programming Problems

Practicum

1. To get familiar with the idea of probability of an event through an experiment.
2. To plot a bivariate data set, determine the line of best fit for their data, and then check the accuracy of your line of best fit.

3. To determine the objective of the problem and express it as linear function of the decision variables involved in the phenomenon.
4. To find area under curves using the integrals.
5. To establish the relationship that exists between two variables using correlation.
6. To get the trend line using linear regression analysis.
7. To optimise the given constraints for the transportation and job scheduling problem.

Suggested Readings

- Gupta, C. B. (2012). Optimization Techniques in Operation Research, I. K. International Publishing House Pvt. Ltd; 2nd Revised Edition.
- John, F. Freund (1996). Modern Elementary Statistics, Pearson; 9 Edition.
- Kolman (2012). Elementary Linear Programming with Applications, Elsevier; Second Edition.
- Mario, F. Triola (1997). Elementary Statistics, Pearson; 7 Edition.
- Mishra, Sanjay (2017). Fundamental of Mathematics: Integral Calculus, Pearson Education, Second Edition
- Narayan, Shanti and Mittal, P. K. (2005). Integral Calculus, S. Chand; 35th Revised Edition.
- Rohatgi, Vijay K. and Saleh, A. K. Md. Ehsanes (2008). An Introduction to Probability and Statistics, Wiley, Second Edition.
- Ross, Sheldon **(**2019). A First Course in Probability, Pearson Education; Ninth Edition.

SEED372A	PHYSICS IV	4

Course Overview

This course deals with the very essentialcharacteristics of light and its associated phenomenon. The students will be introduced to the concepts of wave nature of light and phenomenon of interference, diffraction and polarization depicting the wave nature. It will also cover the significant topic of evolution of universe.The study of Physics IV involves the study of basic concepts in Wave Optics-Interference of Light, Diffraction and Polarization, Laser and Universe

Objectives

The course will enable the student-teachers to –

- Understand the wave nature of light and its associated phenomenon.
- Acquaint with the principles of LASER and its types.
- Have some understanding ofthe origin and evolution of universe.

Unit I: Wave Optics-Interference of Light

Wave theory, Huygen wave theory, Superposition theorem, Interference, types of interference, Young`s double slit experiment, Newton`s ring, Michelson Interferometer.

Unit II: Diffraction and Polarization

Diffraction, Distinction between Diffraction and Interference, Types of diffraction, Fraunhoffer diffraction due to single slit, double slit and diffraction grating. Polarised and Unpolarised light, linear and circular polarization. Brewster's and Malu's law.

Unit III: Laser

Spontaneous and stimulated emission, population inversion, principle of LASER action, properties of LASER-coherence, intensity, monochromacity, He-Ne LASER, semiconductor LASER, applications.

Unit IV: Universe

Our Galaxy, Big Bang Theory, Expansion of the universe- Hubble's law, Microwave background radiation, Nucleosynthesis.

Practicum

1. To determine the wavelength of He-Ne LASER using transmission diffraction grating.
2. To determine the wavelength of sodium light using Newton`s ring apparatus.

3. To determine the wavelength of lines of mercury by plane diffraction grating.

Suggested Readings

- Avadhanulu, M.N. and Kshirsagar, P.G. A Textbook of Engineering Physics.
- Rensick, Halliday and Krane.Physics Volume 2. Wiley.
- Subrahmanyam, N., Lal, B., Avadhanulu, M.N. Optics, S. Chand.

SEED374A	CHEMISTRY IV	4

Course Overview

This course divided into four units Ether, Epoxide and organometallic compounds, Amino acids, Peptides & proteins, Electrochemistry and The halogen family. This subject matter incorporated in this course will help students to Learn nomenclature and reactions of ethers and epoxides, Know about amino acid and peptides and their chemical properties, Provides explanation regarding chemistry of halogen family in terms of Chemical reactivity and group trends, Know about the chemistry of noble gases with Occurrence & uses, rationalization of inertness of noble gases, Understand the basic concepts of electrochemistry, Acquire knowledge about the nature and behaviour of electrolytes and their ionization.

Objectives

The course will enable the student-teachers to –

- Learn structure, stability, methods of synthesis and reactions of ether and epoxides.
- Develop an understanding of behaviour, chemical nature of various compounds like ether, epoxide, and Proteins, Amino acids.
- Acquire knowledge about the nature and behaviour of electrolytes and their ionization.
- Enhance the understanding of basic concepts of electrochemistry.
- Know about the chemistry of noble gases, classification of noble gases, concept of organometallic compounds of Mg and Li and their use in synthesis of organic compound.

Unit I: **Ether, Epoxide and Organometallic Compounds**

Nomenclature,Physical Properties, laboratory preparation, Williamsons Synthesis, Diazomethane methodreactions of ether. Synthesis of epoxides; Acid and base-catalyzed ring opening of epoxides; Orientation of epoxide ring opening. Organometallic compounds of Mg

and Li and their use in synthesis of organic compounds. Reactions of Grignard and Organolithium reagents with epoxides.

Unit II: Amino Acids, Peptides and Proteins

Preparation of Amino Acids, Strecker synthesis using Gabriels phthalimide synthesis, Zwitterion, Isoelectric Point & Electrophoresis. Reactions of Amino acid, Nin Hydrin test. Overview of primary, secondary & Tertiary & quaternery st. of protein, Determination of Primary St. of peptides by Edmann degradation of (N Terminal) & (CTerminal), Synthesis of simple Peptides (up to dipeptides) By N-Protection (t-butyloxycarbonyl and phtholoye), Merrifield Solid phase synthesis.

Unit III: Electrochemistry

Quantitative aspects of Faraday's laws of electrolysis, rules of oxidation/reduction of ions based on half-cell potentials, applications of electrolysis in metallurgy and industry. Chemical cells, reversible and irreversible cells with examples. Electromotive force of a cell and its measurement, Nernst equation; Standard electrode (reduction) potential and its application to different kinds of half-cells. Applications.

Unit IV: The Halogen Family

Chemical reactivity and group trends; Chemistry of preparation of fluorine; Hydrogen halides; HF as a solvent; Preparation and structures of inter-halogen compounds; Polyhalide and polyhalonium ions; polyatomic cations of halogens; Oxides and oxyacids of halogens.

Noble gases: Occurrence & uses, rationalization of inertness of noble gases, Clathrates; preparation and properties of XeF2 and XeF4, XeF6; Nature of bonding in noble gas compounds (Valence bond treatment and MO treatment for XeF2). Molecular shapes of noble gas compounds (VSEPR theory).

Practicum

1. Estimation of total hardness of water samples.
2. Estimation of Ca2+ in solution by (substitution method) using Erio-chrome black-T as indicator.
3. Estimation of glycine by formylation method.
4. Estimation of available chlorine in bleaching powder iodometrically.
5. Oxidation of the following compounds: benzaldehyde, benzyl alcohol acetophenone to benzoic acid (by iodoform reaction).

Suggested Readings

- Bahl, A. and Bahl, B. S. Advanced Organic Chemistry, S. Chand and Co. Ltd., New Delhi.
- Bahl, Arun, Essentials of Physical Chemistry, S. Chand Publishing.
- Finar, I. L. Organic Chemistry (Volume 1), Dorling Kindersley (India) Pvt. Ltd., Pearson Education.
- Morrison, R. N. and Boyd, R. N. Organic Chemistry, Dorling Kindersley (India) Pvt. Ltd., Pearson Education.
- Pandey, O. P., Bajpai, D. N. and Giri, S. Practical Chemistry for B.Sc. I, II and III Students of All Indian Universities.
- Puri, B. R., Sharma, L. R. and Kalia, K. C., Principles of Inorganic Chemistry, Shobhan Lal Nagin Chand & Co., New Delhi.
- Puri, B. R., Sharma, L. R. and Pathania, M. S. Principles of Physical Chemistry, Vishal Publishing Company.
- Vogel, A. I. A Textbook of Quantitative Inorganic Analysis, ELBS.

SEED376A	BIOLOGY IV	4

Course Overview

Biology IV is a course designed to study the effect of Biology on humane welfare. The course provides an overview of Environmental Science, Biology and Human Welfare, Biotechnology and Its Applications to Ecology and Environment. This course helps us to understand the influence of Biology as a Science in day to day life.

Objectives

The course will enable the student-teachers to –

- Develop a concept of Environmental Science as a school subject.
- Develop a concept of food chain and food pyramids.
- Visualise the effects of population explosion and its consequences.
- Establish a relationship between Biology and Human Welfare.
- Develop an understanding of Biotechnology and its Applications for human welfare.

Unit I: Environmental Science

- Biomes, flow of energy: food chains and pyramids.
- Pollution: Water, air, soil, noise pollution.
- Biosphere and its future: Population explosion, Nuclear winter, acid rain, Greenhouse effect.

Unit II: Biology and Human Welfare

- Health and Disease: Pathogens; parasites causing human diseases (Malaria, Filariasis, Ascariasis, Typhoid, Pneumonia, common cold, amoebiasis, ring worm); Basic concepts of immunology–vaccines; Cancer, HIV and AIDs; Adolescence, drug and alcohol abuse.
- Improvement in food production: Plant breeding, tissue culture, single cell protein, Biofortification; Apiculture and Animal husbandry.
- Microbes in human welfare: In household food processing, industrial production, sewage treatment, energy generation and as biocontrol agents and biofertilizers.

Unit III: Biotechnology and Its Applications

- Principles and process of Biotechnology: Genetic engineering (Recombinant DNA technology).
- Application of Biotechnology in health and agriculture: Human insulin and vaccine production, gene therapy; Genetically modified organisms- Bt crops; Transgenic Animals; Biosafety issues– Biopiracy and patents.

Unit IV: Ecology and Environment

- Organisms and environment: Habitat and niche; Population and ecological adaptations; Population interactions–mutualism, competition, predation, parasitism; Population attributes–growth, birth rate and death rate, age distribution.
- Ecosystems: Patterns, components; productivity and decomposition; Energy flow; Pyramids of number, biomass, energy; Nutrient cycling (carbon and phosphorous); Ecological succession; Ecological Services– Carbon fixation, pollination, oxygen release.

- Biodiversity and its conservation: Concept of Biodiversity; Patterns of Biodiversity; Importance of Biodiversity; Loss of Biodiversity; Biodiversity conservation; Hotspots, endangered organisms, extinction, Red Data Book, biosphere reserves, National parks and sanctuaries.
- Environmental issues: Air pollution and its control; Water pollution and its control; Agrochemicals and their effects; Solid waste management; Radioactive waste management; Greenhouse effect and global warming; Ozone depletion; Deforestation; Any three case studies as success stories addressing environmental issues.

Practicum

1. Collect and study soil from at least two different sites and study them for texture, moisture content, pH and water holding capacity of soil. Correlate with the kinds of plants found in them.
2. Collect water from two different water bodies around you and study them for pH, clarity and presence of any living organisms.
3. Study the presence of suspended particulate matter in air at the two widely different sites.
4. Study of plant population density by quadrate method.
5. Study of plant population frequency by quadrate method.
6. Prepare a temporary mount of onion root tip to study mitosis.
7. Study the effect of the different temperatures and three different pH on the activity of salivary amylase on starch.

Suggested Readings

- Beri, A. K. (1981). Textbook of Animal Physiology. EMK Pub.: North Suite, 313 Ponte.
- Burns, S. (1980). Science of Genetics: An Introduction to Heredity, McMillan: New York, 4th Edition.
- DeRobertis, EDP and DeRobertis, EMF. Cell and Molecular Biology, Saunders and Co: USA,
- Devlin, R. M. and Witham, F. H. Plant Physiology, CBS Publishers and Distributors: Shahadara.
- Nielson, Schmidt (1973). Principles for Animal Physiology, Prentice Hall: New Delhi.

- Noggle, G. R. and Fritz, G. J. (1976). Introductory Plant Physiology, Prentice Hall: New Delhi.
- Odum E. P. (1971). Fundamentals of Ecology, Saunders and Co.: London, 3rd Edition.
- Raven, P. H. and Johnson (1995). G. B. Biology, Brown Publisher: England.
- Verma, P. S. (1986). Ecology, Chand Publishers: New Delhi.

SEED378A	HISTORY IV	4

Course Overview

This course will mainly discuss about the reforms, revolutions that has shaped the modern world. The attempt has been made to make students aware about the history of modern world.

Objectives

The course will enable the student-teachers to –

- Learn about different causes and forms of resistance
- Understand reforms and revolutions around the world.
- Understand the significance of Napoleon Age and Unification of Europe.
- Estimate the Causes and consequences of First World War.

Unit I: Age of Reforms and Revolutions

- Renaissance-Emergence, nature and Impact
- The Reformation and Counter Reformation – Cause mature of reformation, results
- American war of Independence – Causes, Events, results

Unit II: Napoleon Age and Unification of Europe

- Napoleonic Era, Early achievements if Napoleon's reforms as first consul, Napoleon as Emperor of France, Continental system, Cause of Napoleon's downfall
- Vienna Congress – main principles and reconstruction of Europe
- The Unification of Italy-Different steps of unification
- Unification of Germany – Steps of German Unification, Bismark's policy of Blood and Iron

Unit III: Causes that led to First World War

- Eastern Question-Struggle of Freedom in Greece, Revolt of Egypt, the Crimean
- First World War-Cause, Events, Results
- Paris Peace Settlements, Assessment of Versailles Paris Settlement
- Russia Revolution of 1917

Unit IV: Between the World Wars

- The Nazi Germany-Causes of Rise of Hitler ‘s Nazi party
- Cause of rise of Fascism in Italy
- Rise of Japan as Modern World Power

Suggested Readings

- Hazen, C. D. Modern European History. Forgotten Books, London.
- Keegan, John (2000). The First World War, Vintage, Penguin Books, London.
- Shirer, William L. and Rosenbaum, Ron (2011). The Rise and fall of the Third Reich,Simon and Schuster, New York.
- Swain, J. E. History of World Civilisation. S. Chand & Company Pvt. Ltd., New Delhi.

SEED380A	POLITICAL SCIENCE IV	4

Course Overview

The Course aims to make the students aware about the various aspects of politics in terms of its Elements, Policies and role of different organization. It also attempts to make learner aware about the unique features of different constitutions of different countries. Basic concepts of International politics, Foreign Policy, International Law and role of International organization is introduced in this course.

Objectives

The course will enable the student-teachers to –

- Understand the various approaches and theories together with the role of power and different organizations.
- Understand the ideologies of different nations.

- Know about the unique features of their constitutions.

Unit I: International Politics

- Meaning, Nature and Scope of International Politics,
- Theories and Approaches: Traditional Vs Scientific, Behavioral,
- Idealist, Realist Systems,
- Game, Communication; Decision-making.

UnitII: Foreign Policy

- Determinants
- Instruments of Foreign Policy i.e. Diplomacy, Propaganda,
- Economic Instruments and War
- Power and its elements
- National Interest
- Balance of Power
- Collective security
- Role of Ideology
- Cold War
- Détente
- Non-alignment and Non-aligned Movement,
- Problems of the Third World.

Unit III: International Law & Global Organizations

- International Law,
- Global Organization:
  - The United Nations
- Regional Organizations:
  - The European Union
  - S.A.A.R.C.
  - A.S.E.A.N.

Unit IV: Comparative Government and Politics

- Constitution of United Kingdom
- United States of America,

- Switzerland,
- France

Suggested Readings

- Basu, Rumki, International Politics: Concepts, Theories and Issues, Sage Publications India, Pvt. Limited.
- Baylis, John, Smith, Steve and Owens, Patricia (2011).The Globalization of World Politics, Oxford University Press.
- Kapur, A. C. and Mishra, K. K. (2010). Select Constitutions, S. Chand.
- Kapur, A. C. Principles of Political Science, S. Chand Publishing.
- Kumar, Mahendra. Theoretical Aspects of International Politics, Shivalal Agarwala and Company.

SEED382A	GEOGRAPHY IV	4

Course Overview

This course provides the students with the Physical Parameters of Geography with reference to Transport, Communication and Trade, Human settlements (World and India) and Geographical perspective on national issues and problems.

Objectives

The course will enable the student-teachers to –

- Familarise the students with transport and communication with reference to roads, railways, waterways and airways.
- Understand communication networking-radio, television, satellite and internet in international trade.
- Develop geographical perspective on some selected issues and problems.
- Develop hands-on approach to study of Geography.

Unit I

Transport, Communication and Trade: Transport and communication Roads, railways, waterways and airways; oil and gas pipelines, national electric grids. Communication networking-radio, television, satellite and Internet. International Trade- Basis and

components, trade balance, major trading organizations, changing pattern of India's foreign trade, sea-routes, inland water-ways, sea ports and their hinter-land.

Unit II

Human settlements (World and India): Unstable and stable settlements, rural settlements: origin, types and patterns; Urban settlements: Origin and growth of towns; functional classification of towns. Problems of urbanization in the world; urbanization in India; Urban slums and squatters. Morphology of cities; distribution of Mega-cities, problems of human settlements in Developing countries.

Unit III

Geographical perspective on selected issues and problems: Environmental pollution-Land, Water, Air, Noise, Global Warning, Poverty, Food Security; Sustainable Development.

Unit IV

Practicals: Processing of Data, Thematic mapping, representing statistical data by various diagrams-Bar, Histogram, Pie etc. Spatial Information technology: GIS, GPS, Computers-Software and Hardware components, Data format, Raster and Vector, editing and topology etc. Spatial Analysis; Overlay, Buffer and Proximity analysis.

Suggested Readings

- Johnes, Hue (1989). Population Geography, Harper and Harper, London.
- Johnson, J. H. (1972). Urban Geography, An Introductory Analysis, Pergamon Press, Oxford.
- Jones, C. F. and Darkenwald, G. G. (19820. Principles of Economic Geography, Surjeet Publications, Delhi.
- Mitchell, B. (1988). Geography and Resource Analysis, Longman, London.
- Strahler, A. H. and Strahler, A. N. (1984). Exercises in Physical Geography, John Wiley, New York.
- Tikkha, R. N. (1989). Bhautik Bhugaol, Kedar Nath Ram Nath, Meerut.
- Zimmerman, E. W. (1964). Introduction to World Resources, Harper and Row, New York.

SEED384A	ECONOMICS IV	4

Course Overview

India is one of the largest economies in the world. It is predicted to be the second largest economy in the world by 2050. So, what contributes to accelerate /impede the growth Indian economy? To answer these students will learn about planningofIndian Economy, Demographic features acting in tandem with Economic policies, agriculture and its role in shaping Indian Economy, poverty and programmes for eradication of poverty in making Indian economy vibrant and robust.

Objectives

The course will enable the student-teachers to –

- Understand the nature and structure of Indian economy and economic planning in India.
- Create awareness about Demographic Features of India's Population.
- Understand the concepts, incidence and extent of poverty in India.
- Understand the features of Indian agricultureand land reforms in India.

Unit I: Nature and Structure of Indian Economy

- Basic characteristics and features of Indian economy.
- Changes in structure of Indian Economy (Primary Sector, Secondary Sector & Tertiary Sector).

Economic Planning in India

- Features
- Objectives and Assessment of Indian Planning. Employment policy

Unit II: Demographic Features of India's Population

- Inter-state disparities in the pattern of development
- Structural Change in the distribution of Income and Workforce in India
- National Income
- Growth and composition
- Contribution of different sector & growth pattern

Unit III: Poverty in India

- Concepts, incidence & extent of poverty in India

- Inequality and Social Justice
- Human Development Index
- Gender Development Indices
- Poverty and unemployment in India.
- Programmes for eradication of poverty and unemployment with special reference to the post – reform era

Unit IV: Agriculture

- Features of Indian Agriculture
- Land relations and land reforms
- Technological aspects, rural credit
- Pricing of agricultural produce
- Impact of Green Revolution on Indian Agriculture
- Recent Trends in Agricultural Development -- Causes of Deceleration
- Future Challenges. New Agricultural strategy

Suggested Readings

- Brahmananda, P. R. and Panchmukhi (1987). The Development Process of Indian Economy, V. R. (Eds.) Himalaya Publishing House, Bombay.
- Byres, T. J. (Ed.) (1998). The Indian Economy: Major Debate since Independence, Oxford University Press, New Delhi.
- Economic and Political Weekly: Various Issues.
- Economic Survey: Government of India. Various Issues.
- Jalan, Bimal (1992). The Indian Economy – Problem and Prospects, Viking, New Delhi.
- Lucas, E. B., and Papanek, G.F. (1988). The Indian Economy- Recent Developments and (Eds.) Future Prospects, Oxford University Press, New Delhi.

Scheme of Studies and Syllabi for B.Ed. Programme as per Choice Based Credit System (CBCS)

Semester VII			
S.No.	**Course Code**	**Course Title**	**C**
1	SEED477A	Research Project I (Case Study)	2
2	SEED479A	School Internship	17
		Total	**19**

SEED477A	**RESEARCH PROJECT I (CASE STUDY)**	**2**

Course Overview

A case study is research method that involves an up-close, in-depth and detailed investigation of a subject of study and its related contextual position. They can be produced following a form of research. A case study helps in bringing the understanding of a complex issue or object. It can extend experience or add strength to the existing knowledge through previous research. Their contextual analysis revolves around a limited number of events or conditions and how they relate. The students would be acquainted with the planning and execution of case studies in order to undertake prognosis and diagnosis of the problems faced by their cases.

Objectives

The course will enable the student-teachers to –

- Do reflective enquiry through classroom based research.
- Enhance the skills of systematic observation and documentation.
- Equip the intern for reflective teaching.

Project Work

1. Every student is required to take up project work in specific area of interest .Project work is designed to initiate students into a process of scientific enquiry, through classroom-based research, Small projects on specific themes such as miscue analysis, gender stereotypes, error analysis ,children's understanding of specific concepts and so on can be taken up.

2. Student intern may use their experience of teaching in identifying project theme, and undertake the task of data-collection during internship. Each individual project will be conducted under the guidance of a faculty member.
3. Each Student expected to understand two or three small projects. These could be related to pedagogy subject to language or may be based on any of the foundation and specialized courses of fourth year.
4. It is expected that the research undertaken will enable students to cultivate skills of systematics observation, documentation, critical analysis and interpretation. This will create a teacher oriented towards probing into children's learning processes with objective of improving classroom practices. Students will be expected to submit a short report on each project.

Each project will be assessed by the supervisors using the following basis and criteria

S.No.	Basis	Criteria
1	Introduction of the concept undertaken for research	• Theoretical and research status • Methodology
2	Data collection	• Authenticity • Richness and detail in records
3	Analysis and Interpretation	• Framework used • Link with theory • Presentation • Comprehensiveness • Use of Examples from raw-data
4	Implications	• Inferences • How do the research findings inform practice?

SEED479A	SCHOOL INTERNSHIP	17

This semester shall entail a field engagement of 16 weeks wherein, the first week will be exclusively dedicated to observing a regular classroom with a regular teacher and would include peer observations, teacher observations and observations of interns' lessons by faculty.

In the next 15 weeks of internship the student teacher shall be engaged in teaching experience wherein the aim shall be meaningful and holistic engagement including the writing of reflective journals. This shall be enriched through extended discussions with peers and faculty on different aspects of the teaching experience accompanied by presentations post the internship in schools.

17 Credits

S. No.	Components
1.	Simulated Lesson Plan (5 lesson plans each in pedagogy of school subject I and pedagogy of school subject II)
2.	Discussion Lessons Plan (2 lesson plans each in pedagogy of school subject I and pedagogy of school subject II) (best of the two lessons in each pedagogy course will be evaluated)
3.	Total 52 Lesson Plans (25 lesson plans in each pedagogy course and 1 lesson plan through the use of multimedia in each pedagogy course)
4.	Use of Teaching-Learning Material in Classroom Discourse (including teaching aids and reference material) (5 teaching aids each in pedagogy of school subject I and pedagogy of school subject II)
5.	Peer Group Observation (10 observations)
6.	PreparingPortfolios
7.	Organising and Maintaining the Records of School Activities
8.	Maintaining a ReflectiveDiary

Scheme of Studies and Syllabi for B.Ed. Programme as per Choice Based Credit System (CBCS)

Semester VIII			
S.No.	**Course Code**	**Course Title**	**C**
1	SEED486A	Gender and Schooling	4
2	SEED488A	Inclusive Education	4
3	SEED490A	Environmental Education	4
2	SEED492A	Research Project II (Educational Issue)	2
4	SEED494A	Resource Center Development	2
5	SEED496A	Understanding ICT and Its Application	2
		Total	**18**

SEED486A	**GENDER AND SCHOOLING**	**4**

Course Overview

Gender is a social construct that impacts attitudes, roles, responsibilities and behavior patterns of boys and girls, men and women in all societies. Gender determines power relations in multicultural societies like India. It deals with human concerns encompassing diversities and differences. It has been the most visible form of discrimination operating across cultures in developing societies. When one analyses the present context of gender discourse, the prime concern is how gender functions as a determinant of construction of knowledge in different disciplines. This course is crucial for addressing gender bias and stereotypes that operate in all social spaces in textual materials and print media accessed by students and other stakeholders. It would make the teachers reflect on her /his socialization and analyze critically the processes that shape masculinity and feminity. Further, it is hoped that teachers as agents of change would encourage students to reflect on their socialization and critique all those practices that perpetuate stereotypes andbiases.

Objectives

The course will enable the student-teachers to -

- Develop basic understanding and familiarity with key concepts-gender, gender bias, gender stereotype, empowerment, gender parity, equity and equality, patriarchy and feminism andtransgender.
- Know about policies, plans and schemes of the government for addressing all forms of disparities and inequalities existing in thesociety
- Learn about gender issues in school, curriculum, textual materials across disciplines, pedagogical processes and its intersection with class, caste, religion and region;and

- Understand the need to address gender based violence in all social spaces and evolve strategies for addressingit.

Unit I: Gender Issues: KeyConcepts

- Gender, Social construction ofGender
- Gender socialization and GenderRoles
- Gender discrimination at different levels of institutions (institutions related to social, cultural, religious, economic, political and educationalsettings).

Unit II: Socialization Processes in India: Family, School and Society

- Gender Identities and socialization practices in different types of families inIndia.
- Gender Concerns related to access, enrolment, retention, participation and overall achievement.
- Gender Issues inCurriculum
- Gender, Culture and Institution: Intersection of class, caste, religion andregion
- Construction of gender in curriculum frameworks since Independence: AnAnalysis
- Gender and the hiddencurriculum
- Gender in text and classroomprocesses
- Life skills andsexuality
- Vishakha Guidelines
- Domestic Violence Act,2005
- Reservation forWomen
- Supreme Court Verdict abouttransgender (**Section 377** of the Indian Penal Code (IPC)

Unit III: Creating Gender Inclusive Classroom

- Developing positive self-concept and self-esteem amonggirls
- Teaching LearningMaterials
- Classroomtransaction
- Teacher as an agent ofchange

Unit IV: Practicum (Any two)

- Analyse Textbooks of Class VI to X (of your State) from the Perspective of Gender Bias andStereotypes.
- Organize Debates in Class on Equity and Equality cutting across Gender, Class, Caste, Religion, Ethnicity Disability andRegion.

- Debates and Discussions on Violation of Rights of Girls and Women in oursociety.
- Analysis of Video Clipping on Portrayal of Women in Print and Audio-VideoMedia.
- Collection of Folklores reflecting Socialization Processes and its Influence on Identity formation.
- Observe Participation of Boys and Girls in different Activities in Heterogeneous Schools- Public and Private-Aided and managed by Religious Denominations and prepare a report.
- Collect material related to Women Role Models in various fields with Emphasis on Women in Unconventional Roles and prepare a briefreport
- Collect thoughts of Eminent Men and Women of India on Girls Education and Women's Empowerment.
- Organize Poster Competition on Gender Equality AndEmpowerment.

Suggested Readings

- Desai, Neera and Thakkar, Usha. (2001). Women in Indian Society. National Book Trust, New Delhi.
- Dunne, M. et al. (2003). Gender and Violence in Schools.UNESCO.
- Kirk Jackie (Ed) (2008). Women Teaching in South Asia, SAGE, NewDelhi.
- Leach, Fiona (2003). Practising Gender Analysis in Education,Oxfam.
- Nayar, Sushila and Kamla, Mankekar (Ed.) (2007). Women Pioneers in India's Renaissance, National Book Trust, New Delhi, India.
- NCERT (2006). National Curriculum Framework 2005: Position Paper, National Focus Group on Gender Issues in Education, NewDelhi.
- Sherwani, Azim. (1998). The Girl Child in Crisis, Indian Social Institute, NewDelhi.
- Srivastava, Gouri, (2012). Gender and Peace in Textbooks and Schooling Processes, Concept Publishing Company Pvt. Ltd, NewDelhi.
- Unterhalter, Elaine (2007). Gender, Schooling and Global Social Justice, Routledge.

SEED488A	INCLUSIVE EDUCATION	4

Course Overview

The diversity in the society is a fact and the reflection of it in the school is natural. Traditionally these diversities were considered as inability of the individual to be able to meet the requirement of the school/classroom. Now diversities are considered as imposed by the hurdles created by the society. Similarly the difficulties of students to learn in the classroom

are due to the expectation of the system, architecture of the building and classroom, design of teaching and many other related factors. The philosophy underlying this course is that every student is unique and each one has the potentiality to learn. The management of individual difference is a social responsibility which a school has to accept. Creating a learning environment to provide opportunity to participate fully in the process of learning is the task for a teacher. This is a short course with an intention to develop a thought in the teacher which results in accepting all children in the class as his/her responsibility. This is a small beginning to a teacher towards a major change in the system and society. With this course it is expected that the teacher will reflect on the student whois deviant in the class as different who needs the input and attention like other students. Include case studies and interactions with eminent speaker, group discussions, book reviews, self-learning, ICT based teaching learning, visits to various schools (special, integrated and inclusive) and institutions (national and regional centers), viewing relevant documentaries and films, critical analysis andreflections.

Objectives

The course will enable the student-teachers to -

- Understand the meaning and significance of Inclusiveeducation
- Gain knowledge on Policy and legislative frameworks promotinginclusion
- Learn to create inclusive classrooms using inclusive pedagogy – (teaching strategies, CCE)
- Understand the linkages and collaborations for resourcemobilization.

Unit I: Understanding Inclusion in Education

- History of inclusion –paradigm shift from segregation toinclusion
- Policy perspective: Initiatives to promote inclusiveeducation
- International Focus: Salamanca 1994, UNCRPD, EFA(MDG)
- National Focus: Constitutional obligations for education of diverse groups, NPE, 1986-92, PWD Act 1995, National Policy for PWD, 2006, revised PWD Bill 2012, RCI Act, NCF 2005 and NFG paper, SSA, RMSA, National Commission on Minority Education Institutions (NCMEI), National Commission for Education of SC,ST
- Educational concessions, facilities andprovisions.

Unit II: Understanding Physical, Psychological and Social-Cultural Diversity

- Diversity due to disability (Nature, Characteristic andNeeds)
- Special needs of children with sensorydisabilities,
- Special needs of children with cognitivedisabilities
- Special needs of children with physicaldisabilities

- Girls with disabilities- Issues, Challenges, and SupportiveProgrammes
- Diversity due to socio- cultural and economicfactors
- Discrimination, language attitudes, violence andabuse.

Unit III: Addressing Learners' Diversity

- CurricularIssues
- Curriculum adaptation/modifications
- Contentcontextualization
- Assessment and Evaluation-- Continuous Comprehensive Evaluation (CCE), Alternative means for assessment and evaluation in inclusive classrooms,
- Learning and learner support--assistive and adaptive devices,ICT
- Universal Design in Learning(UDL)

Unit IV: Practicum (Any Two)

- During the internship period visit a nearby school. Observe the teaching learning processes, infrastructure available and assess the nature of inclusive practice. List the existing challenges and factors that promote inclusive practices. Please give justifications.
- Prepare the need profile of all children in a class. Critically analyze the profile thus prepared for establishing relation between students' needs and their abilities/disabilities. Identify relationship between students' needs and their socio-economic and educationalstatus.
- Study the assessment and evaluation practices being followed in a school. Critically reflect on the practices in the context of inclusiveeducation.
- Visit a nearby special, inclusive and regular school. Make observations in terms of time table, teaching learning activities, infrastructure, child to child interaction and parental support. Compare thepractices.
- Carry out interaction with the regular teachers and ascertain the current challenges for promoting inclusive education. Try to collect their opinion on the subject. Talk to at least 25teachers.
- Is inclusion a new concept? Find evidence of inclusion in Vedic era and trace the journey to modern times. Think. Reflect andDiscuss.

Suggested Readings

- Ainscow, M. and Booth, T. (2002). Index for Inclusion: Developing Learning and Participation in Schools. Bristol: CSIE.

- Ainscow, M., Dyson, A. and Booth, T. (2006). Improving Schools, Developing Inclusion, London:Routledge.
- Hegarty, S. and Mithu, Alur (2002). Education and Children with Special Educational Needs- Segregation to Inclusion, New Delhi: Sage Publication India Pvt.Ltd.
- Jha, M. (2002). Inclusive Education for All: Schools without Walls, Heinemann Educational publishers, Multivista Global Ltd, Chennai.
- Julka, A. (2006). Meeting Special Needs in Schools: A Manual, NCERT, New Delhi.
- Julka, A. (2014). Teachers Creating Inclusive Classrooms: Issues and Challenges – A Research Study.
- Julka, A. (2015). Including Children with Special Needs: Upper Primary Stage, NCERT, New Delhi.
- Julka. A. (2012). Index of Inclusion. NCERT, New Delhi.
- MHRD (2009). The Right of Children to Free and Compulsory Education Act, 2009. Ministry of Human Resource Development, New Delhi.
- NCERT (2006). Position Paper : National Focus Group on Education of children with Special Needs, NCERT;DEGSN, New Delhi.
- NCERT (2006). Position Paper: National Focus Group on Problems of Scheduled Castes and Scheduled Tribe Children NCERT, New Delhi.
- UNICEF (2003). Examples of Inclusive Education, UNICEF ROSA, Kathmandu.
- World Bank (2003). Inclusive Education: Achieving Education for All including those with Disabilities and Special Educational Needs.
- Ysseldyke, J. E. and Algozzine, B. (1998). Special Education: A Practical approach for Teachers, New Delhi: Kanishka Publishers Distributors.

SEED490A	ENVIRONMENTAL EDUCATION	4

Course Overview

The quality of our lives is increasingly depending on our environment where we are. However, along with the development of the economy, science and technology environmental problems appear more and more with a higher frequency in everywhere and every time in the global. And so people have cared more and more about environment and given many solutions to solve environmental problems, Environmental Education (EE) being one of them. EE was born by the demands to protect the environment and by the higher understanding about the environment. EE helps everyone to learn about the environment and adjust their attitudes to a more environmentally friendly way of living and EE became a part of the educational system. The term "Environmental Education" appeared at the first time at the first IUCN conference in Paris in, but it was defined and recognized officially in 1962 by Rachel Carson. And through the last over 50 years, EE has been defined and redefined. Over a period of time the concept of EE has evolved. EE is defined as the process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness among man, his/ her culture and his/ her biophysical surroundings. Environmental Education also entails practice in decision making and self-formulation of a code of behaviour about issues concerning environmental quality". EE is a way forward for Sustainable Development. In recent time EE for Sustainable Development is reemphasised (EESD). EESD has four major focuses: (1) improving the quality of and access to basic education, (2) reorienting existing education to address sustainability, (3) improving public awareness, and (4) providing training for business, industry, and government.

Objectives

The course will enable the student-teachers to -

- Understand and reflect on the concept and characteristics of environmental education from various aspects.
- Develop awareness understanding and concern about environment and associated problems, and to develop knowledge, skills, attitudes, motivation and commitment to work individually and collectively towards their solutions and prevention of new ones.
- Do teaching learning about the environment, through the environment and for the environment.
- Develop special skill needed to link theoretical understanding with practical/applied aspects.

Unit I: Nature and Scope of Environmental Education

- Nature, need and scope of environmental education and its conservation
- Environmental education: a way of implementing the goals of environmental protection.
- Present status of environmental education at various levels
- India as a mega biodiversity Nation, Different ecosystems at national and global level.
- Role of individual in conservation of natural resources: water, energy and food
- Role of individual in prevention of pollution: air and water
- Equitable uses of resources for sustainable livelihoods
- Environmental legislation: awareness and issues involved in enforcement
- Role of information technology and media in environment awareness/consciousness

Unit II: Community Participation and Environment

- Community participation in natural resource management – water, forests, etc.
- Change in forest cover over time.
- Deforestation in the context of tribal life
- Sustainable land use management
- Traditional knowledge and biodiversity conservation
- Developmental projects, including Government initiatives and their impact on biodiversity conservation
- Issues involved in enforcement of environment legislations
- Role of media and ecotourism in creating environmental awareness
- Role of local bodies in environmental management
- Shifting cultivation and its impact on environment

Unit III: Environmental Issues and Concerns

- Consumerism and waste generation and its management
- Genetically-modified crops and food security: Impacts positive and negative
- Water consumption pattern in rural and urban settlement
- Ethno-botany and its role in the present day world
- Environmental degradation and its impact on the health of people
- Economic growth and sustainable consumption
- Organic farming
- Agricultural waste: Their impact and management

- Rain water harvesting and water resource management
- Biomedical waste management
- Changing patterns of energy and water consumption.

Unit IV: Initiatives by various Agencies for Environment Education

- Environmental conservation in the globalized world in the context of global problem
- Alternative sources of energy
- Impact of natural-disaster/man-made disaster on environment
- Biological control for sustainable agriculture
- Heat production and greenhouse gas emission
- Impact of industry/mining/transport on environment
- Sustainable use of forest produces.
- Governmental and non-government initiatives.
- Supreme Court order implementation of Environmental Education (EE)

Practicum (Any One)

1. A study of major initiatives taken by NCERT regarding environmental education.
2. Study of Development of slum area and their inhabitants in a nearby area/institute
3. A critical study of school habitat in the context of drinking water, sanitation paper, energy,
4. Garbage management etc.
5. Develop a road map for implementation of Environmental Education as suggested by NCF2005.
6. Develop a list of investigatory environmental problems (stage specific) work on the problem in a group of 2-3. Prepare a report.

Suggested Readings

- NCERT (2005). National Curriculum Framework. New Delhi: NCERT.
- NCERT (2005). Syllabus for Elementary Classes, Volume I. New Delhi: NCERT.
- NCERT (2007/2013). Looking Around Us, EVS Textbooks (3-5), New Delhi: NCERT.
- NCERT (2008). Source Book on Assessment for Classes I–V, Environmental Studies, New Delhi: NCERT.
- Sarabhai V.K. et al. (2007). Tbilisi to Ahmadabad – The Journey of

EnvironmentalEducation–A Source book, Centre for Environment Education, Ahmadabad.

- SCERT (2011). Paryavaran adhyayan aur vigyan shikshan, D.El.Ed.-ODL Course: Chhattisgarh.
- SCERT (2012/2013). We-Our environment, EVS Textbooks (3-5): Andhra Pradesh.
- Seminar Proceedings (1995-96). Seminar on EVS, organized by Vidya Bhawan, Udaipur.
- Springer (2006). Science Literacy in Primary Schools and Pre-Schools.
- Teachers: A Prototype Program: UNESCO, UNEP International EE Program.
- The Green teacher (1997). Ideas, Experiences and Learning in Educating for the environment: Centre for Environment Education.
- UNESCO (1988). Games and Toys in Teaching of Science and Technology: UNESCO.
- UNESCO (1990). An Environmental Education Approach to the Training of Middle Level.
- UNICEF (2008). Best Practice Guidelines for teaching Environmental Studies in Maldivian Primary Schools: UNICEF.

SEED492A	RESEARCH PROJECT II (EDUCATIONAL ISSUE)	2

Course Overview

Educational research is a more formal, focused and an intensive process of carrying out a scientific method of analysis. The main purpose of educational research is focused upon scientific investigation and provides solutions to the problems in the field of education. Research in education represents an activity, directed towards the development of an organized body of scientific knowledge about the events with which educators are concerned. Educational research is the part of behavioural sciences, in which, emphasis has been put upon understanding, explaining, predicting and to some degree controlling human behaviour. Research in education is use of the methods of scientific analysis to produce information, needed to make improvements in educational planning, decision making, teaching and learning, curriculum development, understanding of children and youth, use of instructional media, school organization and education management

Objectives

The course will enable the student-teachers to –

- Undertake reflective enquiry through classroom based research.
- Enhance the skills of systematic observation and documentation.

- Pursue reflective teaching classroom-based research.

Project

1. Every student is required to take up project work in specific area of interest .Project work is designed to initiate students into a process of scientific enquiry, through classroom based research, Small projects on specific themes such as miscue analysis, gender stereotypes, error analysis, children's understanding of specific concepts and so on can be taken.
2. Student intern may use their experience of teaching in identifying project theme, and undertake the task of data-collection during internship. Each individual project will be conducted under the guidance of a faculty member.
3. Each Student expected to understand two or three small projects. These could be related to pedagogy subject to language or may be based on any of the foundation and specialized courses of fourth year.
4. It is expected that the research undertaken will enable students to cultivate skills of systematics observation, documentation, critical analysis and interpretation. This will create a teacher oriented towards probing into children's learning processes with objective of improving classroom practices.
5. Students will be expected to submit a short report on each project.

Each project will be assessed by the supervisors using the following basis and criteria

S. No.	Basis	Criteria
1	Introduction of the concept undertaken for research	• Theoretical and research status • Methodology
2	Data collection	• Authenticity • Richness and detail in records
3	Analysis and Interpretation	• Framework used • Link with theory • Presentation • Comprehensiveness • Use of Examples from raw-data
4	Implications	• Inferences • How do the research findings inform Practice?

SEED494A	RESOURCE CENTER DEVELOPMENT	2

The objective of this course for students is to culminate the process of school internship into a center for resources.it is envisioned that the subsequent batches of students would build the resources further. This would initiate the process of innovation in the internship schools, thus creating possible changes in teaching –learning practices.

All student-teachers, in a given school, would collate resources they have used during their teaching. Such resources would include the description of activities designed, material required, teaching aids, supplementary learning material, and a record of reflective insight into the transaction process.

Student-teachers will be required to collate teaching-learning material that they have used, including books, children's literature, problem-solving tasks and games. In addition, students need to spend time on identifying children's literature and other educational material that could serve well for elementary school teacher.

The resource center needs to be set-up under the facilitation and guidance of faculty supervisors.

Each student-teachers contribution will be assessed individually and in groups, using the following basis and criteria

S.No.	Basis	Criteria
1	Activities	Choice of Activity, Design of Activity Use of Activity, Presentation and Records.
2	Materials	Link with activities, Choice of materials Feasibility in terms of cost and use
3	Children's Literature	Choice in terms of age, Rationale and relevance use of Books Link with activities
4	Children's games and Problem-solving tasks organisation	Choice in terms of age and relevance Link with activities and pedagogy Categorization and a system of access and retrieval Space organisation Local teacher's involvement Individual initiative and involvement
5	Reports	Visits to existing Resource centers Plan of Process to be undertaken for future development.

SEED496A	UNDERSTANDING ICT AND IT'S APPLICATION	2

Course Overview

Preparing teachers to use technology in a classroom is an important step for ICT enabled education in the country. The present course focuses on moving beyond computer literacy and ICT-aided learning, to help student-teachers interpret and adapt ICTs in line with educational aims and principles. It explores ICTs along three broad strands: teaching-learning, administrative and academic support systems, and broader implications for society. The course will help student-teachers reflect critically and act responsibly to prevent use of ICTs to support centralization of larger knowledge structures; it will show student-teachers how ICTs can be adapted to support decentralized structures and processes; as well as build the 'digital public' to make education a participatory and emancipatory process.

Objectives

The course will enable the student-teachers to -

- Appreciate the historical development of various educational media.
- Demonstrate understanding of the main components of the computer hardware in use.
- Use various digital technologies (hardware and software) for creating resources and providing learning experiences for all types of learners (including differently abled).
- Use various ICTs for project based/problem based constructivist learning environment.
- Explain the role of ICT in authentic and alternative assessment.
- Understand the social, economic, and ethical issues associated with the use of ICT.

Unit I: Introduction to Information and Communication Technology

- Use of Technology in Education: In Retrospect.
- Information and Communication Technology: Meaning, nature and advantages
- Hardware and Software Fundamentals
- Computer hardware fundamentals (anatomy, block-diagram and overview of components, CPU, main memory, input & output devices, storage devices), types of computers.
- Computer Networks- Internet, Intranet& applications. Network fundamentals.
- Use of digital camera, recorder, scanner, printer, interactive white board, visualizer, and multimedia projector for creating and using multimedia resources
- Software Fundamentals

- Software - Meaning and types; System software: Operating systems such as Windows, Linux, MacOS;Application software: Work, communication and other productivity tools.
- Introduction to office applications (Word processing, Spreadsheet Presentations, Databases, Drawing tools, Multimedia tools, File formats and conversion, utility tools

Unit II: ICT and Pedagogy

- Approaches to integrating ICT in teaching and learning: Technological Pedagogical Content Knowledge (TPCK)
- Subject specific ICT tools for creating and facilitating learning
- Subject specific online resources and their use
- Designing technology integrated learning experiences
- ICT integrated Unit plan - Use of Web 2.0 for creating constructivist learning environment
- Assistive technology for children with special needs: Tools and processes; Universal Design for Learning (UDL)
- ICT for Pedagogical Innovations
    - Project/problem based learning (PBL): Role of ICT in developing technology integrated PBL unit
    - Web Quest and virtual field trips: Concept, process, and use in the classroom
    - Multiple intelligences in classroom: ICT tools and applications
    - Mobile learning and related applications
    - Open Educational Resources - Meaning and importance, various OER initiatives
    - Massive Open Online Courses (MOOC)-Concept and use
    - Flipped classrooms: Meaning and possibilities

Unit 3: ICT for Assessment and Management

- ICT and Assessment
    - Electronic assessment portfolio - Concept and types; e-portfolio tools
    - Creating and use of electronic rubrics for assessment
    - Online and offline assessment tools - Rubrics, survey tools, puzzle makers, test generators, reflective journal, question bank
    - ICT applications for CCE
    - Learning analytics and feedback

- ICT and Management
    - ICT initiatives and standards
    - ICT for personal management: e-mail, planners, networking
    - ICT for educational administration: Scheduling, record-keeping, student information, electronic grade book, connecting with parents and community, ERP Tools for managing information in an organization.
    - Computer security: Understanding the basic goals of security and the types of attacks, malicious software and security software. Being familiar with the basic computer security terminology and safe practices.

Unit IV: Practicum (Any Two)

- Creating account in wikispace/wikipedia/mediawiki and adding/editing content.
- Developing an educational blog in www.blogger.com, www.wordpress.com or www.edublog.com
- LMS experience- hands on various features of LMS - the ICT course may be provided through LMS.
- Evaluation of RLO repositories and creating RLO and uploading to repositories.
- A critical study of some e-learning courses and enrolling and completing some free e-learning courses.
- Developing a multimedia e-content for a topic using eXe Learning.
- Field visit to the EDUSAT center and take part in teleconferencing.
- Planning and creating digital rubrics for any topic.
- Organize web conferencing using Skype/Yahoo Messenger/Google+
- Review of ICT labs (plans and equipments/resources) in school from internet.
- Interview of computer hardware engineer/ICT specialist regarding Hardware planning, evaluation, maintenance and up gradation.
- Developing an electronic assessment portfolio.
- Developing an electronic teaching portfolio.
- Readings on emerging ICT trends in education.
- Review of national ICT policy and curriculum.
- Using FOSS tools for timetabling, grade sheet.
- Creating social bookmarking account and creating social bookmarking of internet resources using any social bookmarking tools (diigo,delicious,stumbleupon, Shelfari).

- Hands on experience in setting up a desktop PC and working with various input devices, output devices, storage devices, and display devices.
- Practicing word processing using Indian language software.
- Practice in installing various system and application software.
- Using word processor, spread sheet, and presentation software to produce various teaching learning resources and sharing it online.
- Locating internet resources - navigating, searching, selecting, saving and evaluating (use standard internet evaluation criteria).
- Creating digital concept maps, flow charts, timelines for a particular content.
- Shooting, editing, and sharing of videos segment on any educational topic.
- Creating a simple 2D animation using pencil or Tupi.
- Creating and editing various graphics.
- Creating account in teacher tube/ slideshare and sharing video/presentation. Viewing and commenting on others' contributions.
- Creating resources for flipped classroom and practicing flipped learning in school.
- Evaluating OER resources. Creating and sharing OER materials.
- Developing technology integrated unit/lesson plans and trying out in schools.
- Hands on experience on subject specific software tools like Geogebra, PhET, Stellarium, etc.
- Taking part in an ICT integrated online project based or problem based learning activity.

Suggested Readings

- Ahmad, J., Ahmad, M. S. and Khan, A. (2012). Computer Applications in Education, Neelkamal Publication, Hyderabad.
- Bharihok, D. (2000). Fundamentals of Information Technology. Pentagon Press, New Delhi.
- C.E.M.C.A. (2014). Technology Tools for Teachers, Commonwealth Educational Media Center for Asia, 13/14,Sarva Priya Vihar, New Delhi.
- Dash, Manoj Kumar (2010). ICT in Teacher Development, Neel Kamal Publications, New Delhi.
- David, M. (2009). Project Based Learning - Using Information Technology, Second Edition, Viva Books, New Delhi.
- Government of India (2004 and revised 2010). National ICT @ Schools Scheme, Department of School Education and literacy, MHRD, Govt. of India, New Delhi.
- Government of India (2012). National Mission on Education through ICTs (NME-ICT), Department of Higher Education, MHRD, Govt. of India, New Delhi.

- James, K. L. (2003). The Internet: A User's Guide. Prentice Hall of India Pvt. Ltd, New Delhi.
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- Mohanty, Laxman and Vora, Neeharika (2008). ICT Strategies for Schools - A Guide for School Administrators. Sage Publications, New Delhi.
- Mohit, K. (2003). Design and implementation of Web-enabled Teaching Tools, IRM Press, UK.
- NCERT (2013). Information and Communication Technology for School System: Curricula for ICTs in Education (Students and Teachers), Version 1.2, CIET-NCERT, NCERT, New Delhi (www.ictcurriculum.gov.in).
- NCERT (2013). National Repository of Open Educational resources (NROET), CIET-NCERT, NCERT, New Delhi (www.nroer.gov.in).
- Semenov, Alexy (2005). Information and Communication Technologies in Schools - A handbook for Teachers, UNESCO.
- UNESCO (2002). UNESCO Report: Information and Communication Technologies in Teacher Education - A Planning Guide, Division of Higher Education, UNESCO.
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Value Added Course

1	**SEED544A**	**GANDHIAN PHILOSOPHY: THEORY AND PRACTICES**

Course Overview

Mahatma Gandhi and his principles have great relevance in this era of Globalisation. Violent conflict and instability disrupt markets and societies. A peaceful environment is a pre requisite for successful business. Inclusive Growth is necessary for sustainable development. This course is designed to inculcate strong values in students and sensitise the youth to the problems of the marginalized. It aims at training the students in the art of participatory management and peaceful methods of conflict resolution. Through an interesting and well-planned mix of lectures, presentations, skits, films, social outreach programmes and other activities it aims at developing the overall personality of students by helping them discover their latent talents and instilling leadership qualities. True education is not just coming out with a degree. It is how you change and what your values are when you finish. Peace is definitely good business and efforts to promote it certainly makes good business sense. With increasing number of Companies going in for Corporate Social Responsibility students who have completed this Course will definitely have an edge over others as the job market may prefer those who have executed some social sector responsibilities in addition to academics.

Objectives

The course will enable the student-teachers to -

- Develop an understanding of Gandhi's life and his philosophy.
- Acquaint the students with the concept of Swaraj as viewed by Mahatma Gandhi.
- Understand the role of Satyagrah in the independence movement of India.
- Familiarise the students with Political, Economical & Social philosophy of Gandhi.
- Emphasize the importance of Charkha and Khadi in the contemporary time.

Unit I: Gandhi's Life and Central Philosophy (based on My Experiments with Truth)

- Life of Gandhi
    - Childhood, Student life, Lawyer, Satyagrahi, Social reformer, Revolutionary leader
    - What Gandhi absorbed from the Gita - Anasakti – Karmayoga - Idea of Yajna
- Central Philosophy
    - Ashrams
    - Truth as God
    - Truth and Love
    - Meaning and Power of Non-violence
    - Sarva dharma samabhava/ Equality of religions and equal respect for all religions
    - Satyagraha as a weapon of social change/revolution
    - Satyagraha and constructive work or service
- Major Satyagrahas led by Gandhi
    - Satyagraha in South Africa
    - Champaran Satyagrahi
    - Kheda Satyagraha
    - Ahmedabad Satyagraha
    - Salt Satyagraha
    - Individual Civil Disobedience
    - Quit India 1942

Unit II: Thoughts of Gandhi - Political, Economical & Social

- Gandhi's concept of politics - goals and methods of action
- Equality - Extent of equality - Rights and Duties
- Gandhi’s Concept of Swaraj - Decentralized Administration
- Gram Swaraj - Ram Rajya - Panchayati Raj
- Village industries and crafts including small scale industries
- Gandhi’s critique of Industrialism - Evils and consequences
- Distribution - Ownership - Trusteeship
- Swadeshi - Khadi & Charkha - Village industries
- Concept of Gramswaraj
- Varanshram system and its distinction from caste system
- Untouchability and the method of struggle against it - Harijan welfare
- Place of hygiene, sanitation and safayi
- Work against leprosy
- Empowerment of Women
- Gandhian Perspectives on Education
- Communal harmony–National Unity, ideals of casteless and classless society
- Self-reliance

Suggested Readings

- Acharya, R., & Tanna, G. C. (2). Mahatma Gandhi to Modi. Ahmedabad, India: Nanolan.
- Baranavala, V. K. and Mahatma G. (2011). Hind svaraja: nava sabhyata-vimarsa(saṃskaraṇa.). New Delhi: Rajakamala Prakasana.
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- Gandhi, M. K. (2012). My early life: an illustrated story. New Delhi: Oxford University Press.
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- Garg, M., & Segal, S. (2010). Anitya: halfway to nowhere. New Delhi: Oxford University Press.
- Gonsalves, P. (2012). Khadi: Gandhi's mega symbol of subversion. Thousand Oaks, Calif: SAGE Publications.
- Gregg, R. B. (2013). Power of Non-Violence. Read Books Ltd.
- Jain, Suman. (2010). Gandhi vichar aur sahitya. New Delhi: Vaniprakashan.
- Kamal, K. L. (2011). Gandhi ka viklap nahi. Delhi: National publication.
- Kripalani, J. B. (2003). Gandhi his life and thought. New Delhi: Ministry of Information and Broadcasting.
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- Natani, P. (2002). Gandhi, Nehru aur Tagore. Jaipur: Pointer publication.
- Pratap, R. (2009). Gandhian management: the paragon of higher order management. Mumbai: Jaico Pub. House.
- Shanker, R. (1969). The story of Gandhi. New Delhi: Children's Book Trust.
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- Singh, N., Gandhi, Patel, V., & National Book Trust (Eds.). (2009). Gandhi, Patel: letters and speeches: differences within consensus. New Delhi: National Book Trust, India.
- Tagore, R. (2002). Mahatmaji and the depressed humanity; East & west. New Delhi: Rupa & Co.
- Vangad, R. C., Sabnani, N., & Chadha, A. (Eds.). (2014). My Gandhi Story. Chennai: Tulika.
- Varma, B. (2012). Gandhi, Ambedakara, dalita, evaṃ samajika nyaya. New Delhi: Aavishkar Prakashan.
- Gandhi, Rajmohan(2017).Gandhi still matters: an appraisal of the Mahatma's legacy. New Delhi: Aleph Book Company

Internet Resources

- Mahatma Gandhi Videos
  - https://www.youtube.com/results?search_query=mahatma+gandhi
- Mahatma Gandhi -Wikipedia, the free encyclopaedia
  - https://en.wikipedia.org/wiki/Mahatma_Gandhi
- Mahatma Gandhi Complete Information
  - http://www.mkgandhi-sarvodaya.org/index.html
- Gandhi World Foundation
  - http://gandhiworld.in/english/index.php
- Manibhavan Gandhi Sangrahalaya
  - http://www.gandhi-manibhavan.org/
- The Gandhi Heritage Portal. It is developed by the Sabarmati Ashram Preservation and Memorial trust, Ahmedabad.
  - https://www.gandhiheritageportal.org/
- Official Website of the Gandhi Research Foundation
  - http://www.gandhifoundation.net/
- Mahatma Gandhi Ashram at Sabarmati, Ahmedabad
  - http://www.gandhiashramsabarmati.org/en/
- Gandhi Serve Foundation - Mahatma Gandhi Research and Media Service
  - http://www.gandhiserve.org/e/
- Mohandas Karamchand Gandhi
  - https://www.britannica.com/biography/Mohandas-Karamchand-Gandhi
- Mahatma Gandhi - Wikipedia, the free encyclopedia.
  - https://en.wikipedia.org/wiki/Mahatma_Gandhi
- Mahatma Gandhi Complete Information Website
  - http://www.mkgandhi-sarvodaya.org/index.html

Annexure

Scheme of Studies and Syllabi for B.El.Ed. Programme as per Choice Based Credit System (CBCS)

Semester I			
S.No.	**Course Code**	**Course Title**	**C**
1	SEED101A	Basic Concepts and Thoughts in Education	4
2	SEED103A	Nature of Language I	4
3	SEED105A	Core Mathematics I	4
4	SEED107A	Core Natural Sciences I	4
5	SEED109A	Core Social Sciences I	4
6		Open Elective	4
7	SEED111A	School Exposure I	2
		Total	**26**

Semester II			
S.No.	**Course Code**	**Course Title**	**C**
1	SEED102A	Child Development	4
2	SEED104A	Nature of Language II	4
3	SEED106A	Core Mathematics II	4
4	SEED108A	Core Natural Sciences II	4
5	SEED110A	Core Social Sciences II	4
6	SEED112A	School Exposure II	2
		Total	**22**

Semester III			
S.No.	**Course Code**	**Course Title**	**C**
1	SEED213A	Cognition and Learning	4
2	SEED215A	Language Acquisition	4
3	SEED217A	Observing Children	2
4	SEED219A	Self-Development Workshop	2
5	SEED221A	Service Learning	2
*Liberal Course (Optional I)			
6	SEED223A	English I	4
	SEED225A	Hindi I	
	SEED227A	Chinese I	
	SEED229A	Mathematics I	
	SEED231A	Physics I	
	SEED233A	Chemistry I	
	SEED235A	Biology I	
	SEED237A	History I	
	SEED239A	Political Science I	
	SEED241A	Geography I	
	SEED243A	Economics I	
		Total	**18**

Semester IV			
S.No.	**Course Code**	**Course Title**	**C**
1	SEED214A	Communication in Teaching-Learning Process	4
2	SEED216A	Logico- Mathematics Education	4
3	SEED218A	Arts in Education	2
4	SEED220A	Yoga Education	2
5	SEED222A	Understanding the Self	2
6	SEED224A	School Attachment Programme and Community Living	2
*Liberal Course (Optional II)			
7	SEED226A	English II	4
	SEED228A	Hindi II	
	SEED230A	Chinese II	
	SEED232A	Mathematics II	
	SEED234A	Physics II	
	SEED236A	Chemistry II	
	SEED238A	Biology II	
	SEED240A	History II	
	SEED242A	Political Science II	
	SEED244A	Geography II	
	SEED246A	Economics II	
		Total	**20**

Semester V			
S.No.	**Course Code**	**Course Title**	**C**
1	SEED345A	Language Across the Curriculum	4
2	SEED347A	Total Quality Management in Education	4
3	SEED349A	Story Telling and Children's Literature	2
4	SEED351A	Academic Enrichment Activities	2
5	SEED353A	School Engagement I	2
*Liberal Course (Optional III)			
6	SEED355A	English III	4
	SEED357A	Hindi III	
	SEED359A	Chinese III	
	SEED361A	Mathematics III	
	SEED363A	Physics III	
	SEED365A	Chemistry III	
	SEED367A	Biology III	
	SEED369A	History III	
	SEED371A	Political Science III	
	SEED373A	Geography III	
	SEED375A	Economics III	
		Total	**18**

Semester VI

S.No.	Course Code	Course Title	C
1	SEED348A	Contemporary India and Education	4
2	SEED350A	Pedagogy of Environmental Studies	4
Optional Course - Pedagogy (Any One)			
3	SEED352A	Pedagogy of Language	4
	SEED354A	Pedagogy of Mathematics	
	SEED356A	Pedagogy of Natural Science	
	SEED358A	Pedagogy of Social Science	
4	SEED360A	Developing Instructional Aids	2
5	SEED362A	School Engagement II	2
*Liberal Course (Optional IV)			
6	SEED364A	English IV	4
	SEED366A	Hindi IV	
	SEED368A	Chinese IV	
	SEED370A	Mathematics IV	
	SEED372A	Physics IV	
	SEED374A	Chemistry IV	
	SEED376A	Biology IV	
	SEED378A	History IV	
	SEED380A	Political Science IV	
	SEED382A	Geography IV	
	SEED384A	Economics IV	
		Total	**20**

Semester VII			
S.No.	**Course Code**	**Course Title**	**C**
1	SEED477A	Research Project I (Case Study)	2
2	SEED479A	School Internship	17
		Total	**19**

Semester VIII			
S.No.	**Course Code**	**Course Title**	**C**
1	SEED486A	Gender and Schooling	4
2	SEED488A	Inclusive Education	4
3	SEED490A	Environmental Education	4
4	SEED492A	Research Project II (Educational Issue)	2
5	SEED494A	Resource Center Development	2
6	SEED496A	Understanding ICT and Its Application	2
		Total	**18**

Value Added Course (Semester VIII)

1	**SEED544A**	**Gandhian Philosophy: Theory and Practices**